A Financial Analysis of the Northeast New Brunswick Wild Blueberry Sector

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Prepared for:

The New Brunswick Department of Agriculture and Rural Development

Prepared by:

KPMG Consulting LP

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Table of Contents

EXECUTIVE SUMMARY ____ i

1. INTRODUCTION ____ 1
   - 1.1 Background 1
   - 1.2 Objectives of the Study 1
   - 1.3 Methodology 2

2. A PROFILE OF NORTHEAST NEW BRUNSWICK WILD BLUEBERRY PRODUCERS ____ 5
   - 2.1 General Description 5
   - 2.2 Land Ownership 5
   - 2.3 Industry Experience 5
   - 2.4 Production Process 6
   - 2.5 Comments of Producers 6
   - 2.6 Debt-Equity Positions 7
   - 2.7 Equipment and Practice Costs 8

3. PRODUCER MODEL ____ 10
   - 3.1 Introduction to the Model 10
   - 3.2 Development Phase 12
   - 3.3 Production Phase 16

4. DEVELOPMENT OPPORTUNITIES ____ 19
   - 4.1 Custom Services 19
   - 4.2 Pollination 19
   - 4.3 Other Cost Savings 21

5. FINANCING PROGRAMS ____ 23
   - 5.1 Existing Programs 23
   - 5.2 Farm Credit Corporation Programs 25
   - 5.3 Other Programs 26
   - 5.4 Discussion of Existing Programs 27
   - 5.5 WBI Land Expansion Loan Modification 29
   - 5.6 Modified Lease Scenario 30

6. DISCUSSION AND RECOMMENDATIONS ____ 33

APPENDIX A: TERMS OF REFERENCE
APPENDIX B: PRODUCER'S MODEL
APPENDIX C: BASE SCENARIO

Executive Summary

In the next ten years, approximately 15,000 acres of land suitable for blueberry production will become available in northeastern New Brunswick as the Department of National Defence decommissions its Tracadie Range. In addition to this, there is significant under-utilized acreage elseshere in the region – up to an additional 15,000 acres may be available for development. Most of this acreage is Crown land – estimates indicate that there are approximately 5000 acres of freehold land available and suitable for development.

The New Brunswick Department of Agriculture and Rural Development (NBDARD) has the mandate of development of the wild blueberry industry in Northeastern New Brunswick, and it would like to develop policies specifically suited to the characteristics of this area and the wider Acadian Peninsula. In consultation with producers in the region, NBDARD has commissioned this study. Objectives of the study include the definition of a financial profile and model of blueberry production in Northeastern New Brunswick, identification of required financial resources and ROIs for a typical producer, evaluation of existing public and private financing tools and recommendations of other methods of industry development.

The methodology of the study included:

- Interviews with 30 producers to determine unit costs of production, uptake of and experience with existing programs, producer's debt/equity levels and history within the industry. Producers were identified as being part of three groups; producers with over 10 years experience and over 100 acres under cultivation, new entrants who have completed the requisite cultural practices and new entrants who have not completed the requisite cultural practices;
- Construction of spreadsheet models of development and production. These were based on standard financial statements (balance sheet, income statement and cash flow statement) and incorporated the data collected in the interview stage. The models were tested under a variety of scenarios including variations in yield, unit costs, land tenure and cultural practice;
- Examination of existing financing programs to determine how well they meet the needs of producers wishing to expand and new entrants wishing to start production. Gaps in program coverage and program overlaps were identified; and
- Exploration of non-financial methods of industry development, including encouragement of the pollination sector, the provision of custom services and other economic spin-offs.

The main conclusion drawn from the model construction and testing was that investment in the wild blueberry industry has to be thought of as a long-term investment from a financial point of view. The industry is relatively capital-intensive and cash breakeven points are not reached until, in some scenarios, after 10 years of development and production. However, blueberry land, once developed, has substantially more value than undeveloped land, due to its greatly improved revenue generation capacity.

A major indication of the model was the high level of equity required on the part of producers in order to qualify for land development loans. This is a function of the current programs – all loan programs require full security in the form of current negotiable or real assets. No program recognizes the future value of either the land or the income stream from it. Although this is standard lending

practice, it requires equity levels in excess of $200,000 on the part of the producer. Many producers would have to put up their homes as security to qualify for the land development loans.

The risk/reward ratio is therefore extremely high – so high that it can be considered a major constraint to new entrants. We identify reduction of the risk/reward ratio as the main financial challenge facing the industry.

The industry appears to be over-supplied with loan programs – so many, in fact, that some are not used. Programs offered run the gamut from soft interest rate, deferrable principal loans to standard commercial loans. Although almost all of the loan programs offered are successful in relieving growers of the necessity of large capital outlays early in the development phase, there are few other benefits save interest buydowns and principal deferrals in the Wild Blueberry Initiative of the NBDARD.

All loan programs except the FIMCLA loans require full security. As determined by our development model, a new entrant would have to pledge most of his/her equity as security in order to obtain the necessary financing for development. This is a major constraint to new entrants. Two solutions are offered – inclusion of a loan guarantee in one or more of the existing programs available to new entrants, and the creation of a program whereby the NBDARD leases cleared land to producers at much higher lease rates than the current lease program. Under this program, the NBDARD recovers its capital in 10 years, while the producer sees cash flow improvements and a dramatic reduction in the equity required to enter the industry.

Attractive development opportunities in the industry include the provision of custom services, especially in the land clearance, pruning, fertilization, pesticide/herbicide and pollination areas. Harvest activities do not appear to offer the same opportunities due to the short season. The concept of an equipment or custom service provision syndicate was explored; this concept shows considerable promise and benefits to both existing producers and new entrants.

The report identifies some constraint in the pollination sector – producers are currently forced to import pollination bees in order to meet pollination requirements. Expansion of the blueberry industry will worsen this problem. A scarcity of bees will raise prices; a shortage will affect crop yields due to a lack of pollination. However, it does not appear that financial incentives alone will serve to develop the pollination industry. Creation of a "demonstration apiary" is recommended both to encourage new entrants to the pollination sector and to provide a forum for research in pollination of crops in northeastern New Brunswick. This demo apiary could easily be self-supporting by rental of the hives for pollination purposes. In the long term, encouragement of other crops requiring pollination is identified as necessary to encourage a healthy, sustainable pollination industry.

In conclusion – world demand for blueberries is rising, due in part to the excellent marketing efforts of the Wild Blueberry Association of North America. Recent research findings indicate that blueberries are ranked #1 among fruits and vegetables in anti-oxidant power, which is sure to increase the popularity of the fruit among health-conscious consumers. In New Brunswick, product prices have risen more than 50% over four years even as yield is increasing, indicating that current crop levels are not meeting the demand. Export markets are expanding, and the future looks good for industry expansion.

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1. Introduction

1.1 Background

Wild blueberries are part of the natural vegetation in a large part of northeastern North America. The practice of burning fields to enhance the yield of blueberry plants were initiated by the native population of this region several hundred years ago. With the advent of modern agricultural techniques, a commercial wild blueberry industry has become well established in the region.

The commercial wild blueberry industry is limited to northeastern North America, as the wild plants are indigenous to this area and are not prevalent elsewhere. Nowadays, approximately 50% of global wild blueberry industry production is generated by Canada. Almost all of this production comes from the Atlantic Provinces and the Lac St. Jean region of eastern Québec.

New Brunswick produces approximately 16% of Canadian wild blueberries, or 8% of the global industry production. The industry in New Brunswick is growing rapidly. The blueberry industry in Northeastern New Brunswick is fairly new and only started to develop actively about 20 years ago.

Development of blueberry production is capital intensive and returns are not seen for a relatively long period of time – longer than in most business enterprises. This is due to several factors – one is the high cost of developing land for blueberry production. In addition, the cultural practice does not involve "planting" – rather, fields are managed in such a way as to encourage more rapid growth of blueberry plants which already exist there. This means that 10 years or more may pass before a blueberry field can be considered to be in "full" production.

In the next ten years, approximately 15,000 acres of land suitable for blueberry production will become available as the Department of National Defense decommissions its Tracadie Range. In addition to this, there is significant under-utilized acreage in the region – up to an additional 15,000 acres may be available for development. Most of this acreage is Crown land – estimates indicate that there are approximately 5000 acres of freehold land available and suitable for development.

The New Brunswick Department of Agriculture and Rural Development (NBDARD) has the mandate of development of the wild blueberry industry in Northeastern New Brunswick, and it would like to develop policies specifically suited to the social and physical characteristics of this area and the wider Acadian Peninsula. In consultation with producers in the region, NBDARD has commissioned this study.

1.2 Objectives of the Study

This study has six objectives, as listed in the Terms of Reference (TORs). The complete Terms of Reference (TORs) may be found in Appendix A. The objectives are:

1. To create a financial profile of a cross-section of wild blueberry growers in Northeastern New Brunswick;

2. To develop a cost of production model for both development and ongoing production, to be tested under a number of different scenarios;
3. To define the minimum financial resources and expected returns on investment for wild blueberry farms under those scenarios;
4. To identify potential opportunities for economic spin-off activities (such as custom services, beekeeping, cooperative purchase of inputs, etc.);
5. To evaluate existing public and private financing tools and determine what gaps exist; and
6. To make other observations and/or recommendations that would be beneficial to the development of the wild blueberry industry in the Northeast.

1.3 Methodology

The study consisted of several discrete activities, consisting of:

- Data gathering in order to gain a detailed look at the costs and operating conditions of blueberry growers in northeastern New Brunswick;
- Design and construction of a model of production;
- Use of that model to test the effect of several different operating scenarios on financial status and to identify minimum required resources, returns on investments and breakeven points;
- Identification of potential opportunities for further development of the industry; and
- Evaluation of existing programs and exploration of other options.

1.3.1 Data Gathering

Thirty growers were surveyed to determine a variety of data, including input costs, equipment costs, development costs, development history and financing, and grower's history and opinions. These growers were drawn from three different groups, as defined in Figure 1.1:

Surveys were done orally and, for the most part, face-to-face. Some follow-up information was collected by telephone interviews.

Where the data was numerical, it was summarized and inspected. Obvious outliers were identified and discarded if appropriate, and mean and standard deviation were calculated. These data provided the input for the development and production models.

The TORs required collection of debt/equity information from the growers. Unfortunately, most growers interviewed were reluctant to divulge information on their financial standing. In lieu of this information from the actual survey respondents, we were able to source some data from FCC loan applications. The consequences of this change will be discussed in following sections.

Figure 1.1 – Groups Defined for this Study

Group One – Long-term producers	Growers who have farmed at least 100 acres of wild blueberries for at least ten years (14 growers)
Group Two – Successful new entrants	New entrants who have opened up to 100 acres of wild blueberry land since 1997 and have completed all the requisite cultural practices in a timely fashion (8 growers).
Group Three – Marginal new entrants	New entrants who have opened up to 100 acres of wild blueberry land since 1997 but have not completed all the requisite cultural practices in a timely fashion (8 growers).

1.3.2 Design of the Model

The TORs detail the development of two discrete models – a Cost of Development model, allowing testing of variances in development on new acreage, and a Cost of Production model, allowing testing of variances in input variable costs. We combined the two models in one comprehensive model, differentiated between the development and production phases by the use of quarterly and annual reporting periods respectively. The model allows testing of all variance criteria listed in the RFP, as well as other variances not listed, including but not limited to:

- Effect of variances in product price received by the producer;
- Effect of harvesting technology;
- Effects of additions of resources (land, debt and equity investment) at times other than the inception; and
- Effect on cash flow of paying for custom services "on account".

The model is designed to show the financial situation of an individual producer (as opposed to the industry as a whole). We are assuming that individual growers are "price-takers" – there is no individual grower large enough to affect product price by varying his/her own production level. In other words, we are assuming a flat demand curve.

The model was developed as an Excel workbook, and is included as a deliverable with this report. This will allow the NBDARD and individual growers to use it for their own purposes and beyond the scope of this study.

1.3.3 Minimum financial resources, ROI and break-even points

The model has balance sheet, cash flow and income statement components. From these, cash flow requirements, return on investment (ROI) and break-even points under a variety of scenarios are determined. ROI is expressed in the Net Present Value and Net Present Value Ratio formats. These results are presented for all development scenarios examined.

1.3.4 Identification of potential opportunities

There are possibilities for economic spin-offs in the industry, such as out-sourcing of custom services, organization of input provision across growers by cooperatives or syndicates. The former are examined within the model with regards to impact on the grower. Cooperatives and syndicates are examined by discussion.

1.3.5 Evaluation of existing financial programs and other options

The existing government financial assistance programs consist of interest rate buy-downs and soft loan provisions. These are not working as well as desired, as many potential entrants do not have the equity required to qualify for the loans (thus, the incentive for this study). These programs are examined from both an anecdotal point of view (opinions gathered during the survey process) and through a "gaps" analysis – a comparison of benefits and coverages of different aspects of project financing.

1.3.6 Structure of this Report

This report contains five additional chapters:

- Chapter 2 presents a profile of Northeast New Brunswick wild blueberry growers, as developed during our interview process. We present both numerical data collected and opinions gathered in our discussions.
- Chapter 3 provides a brief description of the producer model, and the results of the both the scenarios specified in the TORs and several others which we felt were important to an understanding of the industry . Minimum financial resources, return on investment (ROI), breakeven points and other model results are discussed. A more complete description of the model and a "user's manual" are found in Appendix B.
- In Chapter 4, we explore the private-sector possibilities in the blueberry industry, such as producer's co-ops, equipment syndicates and custom providers.
- Chapter 5 is a discussion of the public sector programs currently available to growers, program benefits and constraints and a new program which might be considered.
- Chapter 6 contains our conclusions and recommendations, as well as a discussion of other aspects of the industry not dealt with in the body of the report.

2. A Profile of Northeast New Brunswick Wild Blueberry Producers

2.1 General Description

The list of 30 blueberry producers as received from NBDARD was categorized into the three groups as detailed in the previous chapter.

Sixteen growers are included in Group One – Long-term Producers. These are experienced growers who have developed a level of knowledge through both education programs and experience. The remaining fourteen (Groups Two and Three) are new entrants who have developed land within the last three years.

Most of the producers were willing to reveal information and state recommendations on how they believe the industry could be improved. Growers of Groups Two and Three (new entrants) report a need for education on how to improve production is as important as financial support. Thus far, new and semi-experienced growers attain knowledge mainly from other growers and occasionally from agronomists.

2.2 Land Ownership

A majority of the producers (67%) operate on leased land, 11% on private and 17% both own and lease land. Long-term producers are more likely to own their land - in some cases the land was family-owned prior to production, in others land was initially leased and later purchased. Most growers of Groups Two and Three operate on leased land. Several growers reported a lack of availability of land for expansion. Some questioned land allocation processes and whether fields were distributed equitably to small and large growers.

Many of the growers who operate on leased land were interested in land purchase options. These were mostly experienced growers who are financially strong enough to purchase land. Some growers also fear that their crop is not secure on leased land, due to a perceived possibility of extension of native rights to include agricultural crops on leased crown land.

2.3 Industry Experience

As would be expected, the longer the growers have been in the industry the more experienced they are. However, this does not imply that there is no room for these to improve on production techniques. Producers who have been in the industry for a long time tend to own more equipment as well as utilize more efficient techniques in their operation than new entrants. Due to greater financial stability, Group One producers tend to have fewer financial constraints such as working capital problems, loan security problems. They are able to upgrade equipment more frequently as well as implement more advanced methods in order to improve their production.

During the interview process we learned that some producers are not as well informed as others on aspects such as production procedures, costs of activities and business management techniques.

Some newer entrants especially seemed to be unprepared for the financial responsibility and obligation that developing and operating land entails. In several cases, the importance of pollination and optimum fertilisation/weed-control practices was not recognized. Several producers also appeared to have limited knowledge of their own business, in particular their cash flow.

2.4 Production Process

A majority of the producers interviewed sell their crop to processors where the berries are frozen for resale to blueberry product manufacturers. Some growers also sell to buyers who aggregate the product of several farms for resale, frequently outside the region. Local buyers as well as processors have helped significantly to improve the production of several small growers and have provided them with services such as pruning, fertilisation etc. Besides provision of custom services, buyers and processors sometimes rent out equipment to small growers. This is of great help to these growers since they do not have to invest in equipment; however, depending on the activity, outsourcing can also be rather costly. Buyers and processors also provide consultation on production practices.

Some producers sell to buyers from outside the province depending on the price offered. There were some indications of cooperatives being formed for equipment utilization and aggregation of product for sale to processors. Co-operatives appear to improve individual producer performance, as expertise and assistance is circulated amongst the member producers.

2.5 Comments of Producers

The following is a synopsis of comments received from producers during the interview process. They are presented here as a "snapshot" of producer's opinions.

Many producers expressed the need for more financial support, not only for individual producers but for the industry as a whole. Opinions on the nature and destination of the financial support varied, but most respondents felt that support was required during the development phase as opposed to the production phase. There was no consensus on the type of support required – some suggested loan guarantees, some suggested no-interest loans and several simply made the general statement that Government should invest more in the industry. At the risk of discounting these opinions, it should be noted that opinions of this type are to be expected in a survey of this nature.

New entrants especially reported a need for financial assistance during the land clearance phase. They note that initial input costs are high and generally not recovered before the third or fourth crop. Small growers requested improved financial assistance, such as guaranteed loan possibilities and/or better terms of payment, improved FCC policies, etc.

New producers report they often do not have the necessary funds to invest in machinery and are thus forced to outsource. It was felt that this is too costly and possibly less efficient. Also, outsourced equipment may not be available at the desired time. It is especially difficult to rent mechanical harvesters during harvesting season.

Many producers felt that more research should be carried out on how to increase overall production. Several growers, especially those of Groups Two and Three (new entrants), feel that there is also need for more information on production techniques. Growers felt that there is a lack of agronomists in northeastern New Brunswick. However, when questioned further, most respondents agreed that

technical information and assistance from agronomists was available, but had to be actively sought out.

Several producers said they would be interested in attending courses and/or seminars in order become more informed about production techniques, costs of activities as well as business management techniques. An effective educational program could properly prepare new entrants as well as further educate existing growers. Work-study programs could be offered to young individuals who plan to enter the sector. Growers need to be properly educated about the effectiveness of pollination, optimum application of fertilisers, herbicides, pesticides, etc.

Some growers feel it takes too long to obtain land, and that it is particularly difficult for small growers to acquire land (especially freehold land). They report that not enough progress is being made in distributing what land is available. Some concerns were expressed with respect to the Tracadie Range – these included the risk of soil contamination due to ordnance and difficulties in achieving equitable distribution of land.

2.6 Debt-Equity Positions

Most growers interviewed were more than helpful with input costs and costs of cultural practices. However, there were few growers who were able to divulge their debt/equity or balance sheet information, either at the start of their operations or at the present time, Those few who did report how much they put into their operations were vague or unsure about the amounts and when they were invested. As a result, we cannot conduct an analysis of the debt/equity positions of the 30 growers on the list as submitted by NBDARD.

As a "backup" plan, we requested balance sheet information from the Farm Credit Corporation (FCC). All growers applying for FCC financing are required, as part of their application, to submit a balance sheet detailing their assets, liabilities and net equity.

FCC provided us with information drawn from these balance sheets. They provided the debt and equity figures from the balance sheets of 61 separate loan applications. These applications represent 54 separate producers (6 producers had multiple applications). Once averaged and separated into 4 groups (ranked by total equity), the following statistics are revealed:

Figure 2.1 – Debt/Equity Status of FCC Loan Applicants

	Average Assets	Average Liabilities	Average Equity	Debt/Equity Ratio
Bottom Quartile	128,962	53,113	75,849	70%
Lower Mid Quartile	242,503	93,921	148,582	63%
Upper Mid Quartile	356,635	96,979	259,656	37%
Upper Quartile	1,143,676	324,155	819,521	40%

Note: Growers ranked by equity

Unfortunately, the FCC database could not provide information on whether individual loan applicants were long-time growers or relatively new to blueberry production. Therefore, we cannot make any specific conclusions relative to the three grower groups as defined for this study. However. the data above will be useful when combined with the equity data generated by the model.

2.7 Equipment and Practice Costs

One of the main purposes of the survey was to collect data on unit costs of equipment costs and cultural practices to use as input into the producer model. A summary of this data can be found in Figure 2.2 – Equipment and Practice Costs.

It was surprising to see custom provider prices quoted which were lower than those reported by growers doing their own cultural practices. It is even more surprising if the growers are not including recompense for their own time in the unit costs quoted. However, there are several explanations as to why custom providers may be cheaper than growers providing the same service:

- Custom providers may be able to buy more specialized or more efficient equipment, due to economies of scale. These economies could then be passed on to the grower;
- Custom providers may simply be more efficient at the cultural practice in question, by virtue of the fact that they do more of it than individual producers; and
- Custom providers may not do as thorough a job as growers do on their own fields.

Regardless of the reason, we did not discard this data – there is a scenario assuming the prices as reported. However, we also ran two additional scenarios, assuming custom provider prices 15% and 25% above those reported by producers doing their own work. These are presented in order to approximate the cost of doing the work "for profit".

Figure 2.2 – Equipment and Practice Costs

Unit Costs of Activities

Activity	Units	By Producer			By Custom Provider		
		No. of Responses	Average Unit Cost	Standard Deviation	No. of Responses	Average Unit Cost	Standard Deviation
Clearing							
Small trees and shrubs	$/acre	11	900	254	7	846	242
Woodlot	$/acre	19	1087	422	10	1045	427
Burnt Land	$/acre	3	917	333	2	625	177
Pruning							
Flail Mowing	$/acre	13	66	33	5	56	27
Burning	$/acre	12	116	42	11	133	66
Fertilization	$/acre	15	76	31	11	74	27
Herbicide Application	$/acre	17	94	29	9	103	29
Pesticide Application	$/acre	3	20	9			
Pollination Expense	$/hive				13	67	9
Harvesting							
Hand Rakes	$/lb.	1	0.30		18	0.21	0.03
Push Harvesters	$/lb.	5	0.16	0.01	3	0.17	0.01
Mechanical Harvester	$/lb.	6	0.09	0.02	3	0.09	0.03

Note: Producer's unit costs of activities include fuel, outside labour and expendables. They do not include purchase price of equipment, financing costs, or the producer's own time.

Equipment Prices	No. of Responses	Average	Standard Deviation
Tractor	20	20,961	15,187
Boom Sprayer	9	4,367	3,532
Flail Mower	14	7,014	4,408
Fertilizer Spreader	8	4,575	3,524
Mech. Harvester	5	24,600	8,385
Truck	3	17,667	19,655

3. Producer Model

3.1 Introduction to the Model

In order to provide continuity between the development and production phases, we built one model which combines both phases. We differentiate between the development and production phases by configuring the model to report in quarterly and annual periods respectively. The development model spans 8 years and results are reported quarterly for a more exact look at the development process. The production model spans 24 years and results are reported annually, to gain a better picture of the long-term aspects of production and returns on investment.

It was our intention to build a model which could provide utility beyond this study; as a result, the model is more complex than is required by the study parameters. One of the intentions of this study is to provide indications on potential new policy directions – a versatile working model will assist greatly in refining these potential new policies. A full description of the model is contained in Appendix B, and a copy of the model itself has been transmitted to NBDARD with the final submission of this report. The following short introduction will serve to acquaint the reader with the main features.

The model consists of a set of pro forma financial statements (balance sheet, income statement and cash flow statement) linked to four input modules. The input modules are:

- A "Main" module, which provides an on-line introduction to the model and allows the user to choose between annual and quarterly periods and sole proprietorship or incorporated business form. This module also allows the user to input initial balance sheet information (assets and liabilities).
- An "Operations" module, where information on cultural practice costs and scheduled implementation, harvesting information and revenues, and other miscellaneous information is input;
- A Govt' Programs module which includes input tables for government programs available to blueberry producers. The model allows input for the following programs:
  - Land Expansion and Mechanical Harvester aspects of the NBDARD Enhanced Wild Blueberry Initiative;
  - Crown Land Lease Program;
  - New Land Purchase Program; and
  - Crop Insurance Program for Wild Blueberries.

  All facets of these programs are provided for in the module – it will calculate interest buydowns, principal deferrals and loan payments and input them to the financial statements. The module gives the user a choice of insurance coverage and a table in which to input received indemnities; subsequent premiums are adjusted according to the published insurance policy.
- A Fixed Assets module, where purchase and private-sector loan information for equipment, buildings and land can be input. This module also allows input for estimated maintenance costs and asset lifespans. Users can input the estimated resale value of land to reflect

"appraised" equity values rather than balance sheet values. Loan interest, principal payments and maintenance costs per period are calculated and input to the financial statements.

The "FinStats" sheet contains the financial statements. No user input is required on this sheet. It is available, though, for inspection by the user and as a source of further modifications of the model for specific data reporting requirements.

The model also contains a "Charts" sheet, which has graphic depictions of some of the more important financial indicators. Cash flow, net income after tax, debt/equity position and NPV values are shown for each model period.

The Development Model was tested with the following parameters, as defined by the Terms of Reference:

- 100 acres of leased crown land;
- Owner/operator providing all clearing and cultural practices;
- Yields of 700 lbs/acre in the third year (after clearing) and 1200 lbs/acre in the fifth year after clearing.

The following assumptions were made (in addition to those listed in the Terms of Reference):

- Producer is a sole proprietor for tax purposes;
- 50 acres were cleared in Q3Y1 and a further 50 were cleared in Q3Y2. After the field is cleared, it is pruned in Q1 of the following year and every 2nd year thereafter;
- Fields are fertilized and sprayed with herbicide in Q1 of each cropping year. Pesticide is not used (our surveys indicated that pest control was not done by a majority of producers);
- One beehive per acre is placed in Q2 of each cropping year;
- Harvest price is $0.62/lb paid at time of harvest (this is an average of the past five years' price received). There is no bonus price;
- Land type has small trees and shrubs prior to clearing (clearing cost of $900/acre);
- 65% insurance coverage is purchased;
- Annual administration costs of $1500 are assumed (accounting, utilities, office expenses, etc.);
- Producer's equity is based on the estimated resale value of land rather than the balance sheet value, as loans using land (both freehold and leasehold) as security are approved based on the resale value of that land. Values used were $500/acre prior to the first crop (land is cleared and prepared), $800/acre after the first crop, $1200/acre after the 2nd crop and $1500/acre after the third crop.

Variations from the base scenario were made by varying the specified factor, then adjusting the required input cash and equity as noted above to obtain new starting figures.

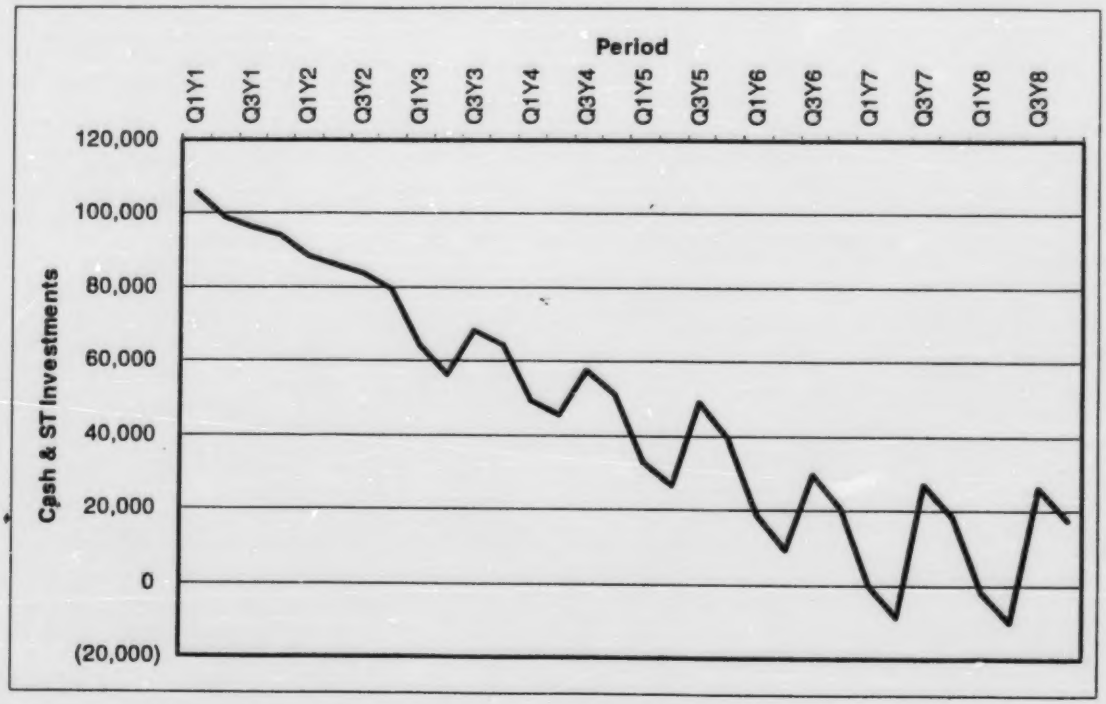
The full set of input data and financial statements for the base scenario can be found in Appendix C. Discussion of the base scenario and variations to it can be found below.

Once all data is in, producer's cash balance at the outset is adjusted to maintain a maximum cash deficit of $10,000 over the development period (6 years). It is assumed that the producer can qualify for a $10,000 unsecured line of credit. The remaining asset classes are adjusted to ensure that the maximum debt/equity ratio at time of any loan granting of 75%. The total equity required which is reported in this study is the equity position at the point of having a debt/equity ratio of 75%. It is assumed, for simplicity, that there is no other income and no outstanding loans at the outset – this is equivalent to saying that "other income" covers at least the debt servicing of any other loans or mortgages.

3.2 Development Phase

Model results indicate that the need for cash infusions continue well beyond the arrival of the first crop. This is due to a combination of factors – the ongoing financing costs of the various equipment loans, and the low initial yields. Figure 3.1 shows the cash flow for the first eight years, by quarter.

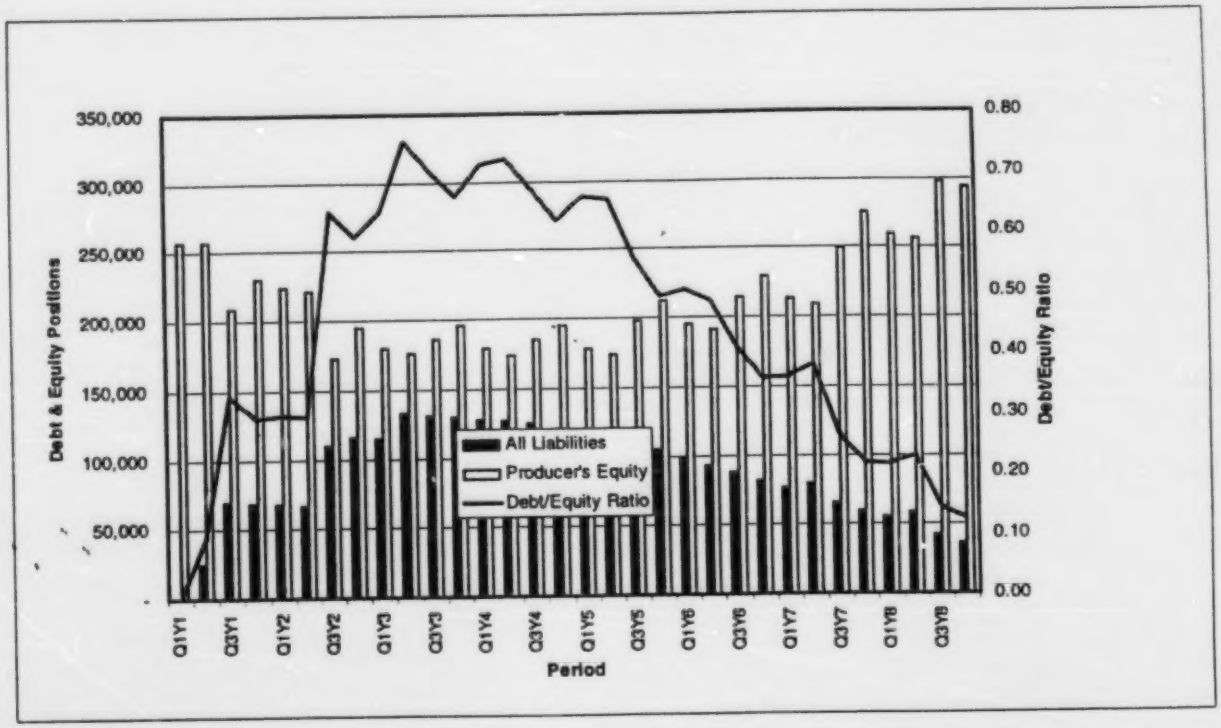
Figure 3.1 Cash Flow



The base scenario cash flow does not turn positive on an annual basis until the third crop on the first cleared section, in Year 7. At this point, some of the initial equipment loans have been retired and the yield has risen to the "production" yield (1800 lbs/acre) for the first time. Total cash required (as measured by the distance between the initial cash position and lowest cash position point shown) is $116,000. As we have assumed that the grower will have access to an unsecured line of credit of $10,000, this means that the grower will require cash infusions totalling approximately $106,000 over the development period (defined on a cash flow basis as 7 years).

Figure 3.2 shows the debt/equity position in each quarter over the development period. As noted before, the producer's equity was adjusted to allow a maximum debt/equity ratio of 75% at the time of granting of any loan required. As can be seen, the debt/equity ratio is approximately at this level for some time – the model indicated that the grower will remain highly leveraged for approximately two years during the development period. If crops do not meet yield expectations, this could cause debt servicing defaults.

Figure 3.2 – Debt/Equity Positions, Base Scenario



In order to meet the maximum 75% debt/equity ratio at time of loans approval, the grower will require a net equity position of approximately $258,000. Our debt/equity analysis indicates that this level is not approached until the upper mid quartile of current borrowers – in other words, approximately 50% of current borrowers would not meet the equity requirements of our model

scenario. If we assume that the majority of new entrants would be in the lower 2 quartiles of the spectrum of borrowers, this indicates that most new entrants would have trouble qualifying for financing if they were building their farms from scratch. This confirms the statements of new entrants during the interview process that improved financial assistance during the development process would be welcome. It also indicates the level of risk assumed by new entrants – if this is the level of securable assets that must be assigned to the debt, it is likely that new entrants would have to assign most of their capital assets (including their homes) to secure the development financing required. Given the high debt/equity ratios indicated between Years 2 and 5 of the development process, it is likely that new entrants would not have much "breathing room" and could lose their assets if debt servicing became a problem due to low yields. It is also important to note that the maximum debt/equity ratio is not reached until Year 2 – by this time, the grower has already committed significant resources to the enterprise. If good forecasting of cash and equity requirements are not made at the outset, the grower may not know he/she is in trouble until it is too late.

There were several variations to the base scenario run to show the effect of changes in various operational parameters. The results of these are shown in Figure 3.3. For future reference, we define the "development phase" herein as the length of time in which net cash inputs to the operation are required.

Figure 3.3 – Other Development Scenarios

Scenario	Cash Input	% of Base Scenario	Equity Req'd	% of Base Scenario	End of Cash Input
Base Scenario	106,000	100%	258,000	100%	Q2, Y8
Land held privately	120,000	113%	258,000	100%	Q2, Y8
Yield increased by 20%	84,500	80%	258,500	100%	Q2, Y7
Yield decreased by 20%	136,000	128%	258,000	100%	>8 years
Add'l burn in Year 3	109,500	103%	250,500	97%	Q2, Y8
Custom Operators	27,500	26%	191,500	74%	Q2, Y7
Custom Ops (15% increase)	47,000	44%	222,000	86%	Q2, Y7
Custom Ops (25% increase)	49,000	46%	244,000	95%	>8 years
Clearing Cost $600	88,000	83%	188,000	73%	Q2, Y7

Base Scenario – As noted above.

Land Held Privately - This scenario assumes that all production land is bought under the new land purchase program. The assumed purchase price is $150/acre. The model results show an increase of $14,000 (13%) in the cash input required in the development phase. The development phase total equity required is the same as the base scenario development phase. *Ceteris paribus*, it is apparent that leasing is a preferable option to buying in the development phase due to the lower cash input requirements.

Yield Increased by 20% - The net effect of this variation is to decrease the cash requirements during development, as might be expected. The increased revenue from increased yields reduces the cash required by $21,500. As all required loans are approved prior to any harvest, a yield increase does not affect the equity required as security. The higher cash input from crops reduced the length of time over which cash inputs are required by one year.

Yield Decreased by 20% - As might be expected, a yield decrease has the opposite effect of a yield increase. Cash input requirements rise 28% to $136,000 during the development period. The development period extends beyond the 8-year horizon of the model. There is no substantial change in the equity required for loan approvals.

Additional Burn in Year 3 – The reason for this variation is to test the financial effect of pruning twice prior to allowing the plants to grow to harvest stage. This serves to increase the yield; as required by the TORs, the first harvest was increased to 1000 lbs/acre, and the second to 1500 lbs/acre. This variation decreased the equity required by 3%. The increased yield and resultant higher revenues produced cash input requirements only slightly over (3%) over those of the base scenario, despite the additional year of cash input required. The main effect of this scenario was to increase the development period length by one year to 8 years.

Use of Custom Operators – As noted previously, the prices obtained for having cultural practices undertaken by custom operators were, in several cases, less than those reported for growers doing the work themselves. Therefore, it does not take further analysis to predict that the grower would be in a better financial situation by having the work done by custom operators. However, the effect of eliminating the purchase of equipment had a dramatic effect – cash input requirements during the development phase were 26% of the base scenario, or $27,500. Total equity required was 74% of the base scenario, or $191,500. The development period was reduced by one year to 7 years.

Custom Operators – 15% increase – Cultural practice costs as reported by growers doing the work themselves were increased by 15% to approximate a for-profit enterprise doing the work. As in the previous scenario, it was assumed that no equipment was purchased. Cash and equity requirements were still substantially less than the base scenario (44% and 86% respectively), indicating that custom provision can provide significant easing of cash flow and equity requirements in the development phase. The development period was shortened to 7 years.

Custom Operators – 25% increase – To further test the custom operators scenarios, we increased the grower's costs by 25%. As part of this scenario, we delayed required payment for the fertilization and herbicide spraying services until after the harvest. The results were substantially similar to the previous scenario – cash input requirements were $49,000 – 46% of the base scenario requirements. Net equity requirements were 95% of the base scenario requirements. However, the development period exceeded the 8-year horizon of the model – this indicates the sensitivity of the overall enterprise to unit rates of cultural practices.

Clearing Cost $600/Acre - The last scenario tests the effect of a reduction in initial clearing cost. This could be due to a different land type (such as old farm land or burnt land) or the effect of a government grant for clearing land (such as was the case during the federal/provincial "Cooperation Agreements). Cash input requirements are reduced by 17% to $88,000, and total equity requirements are reduced by 28% to $178,000.

Overall, the most dramatic effects on the development phase finances were generated by the use of custom operators. On the operations side, the greatest possibilities for these services appear to be generated in the land clearing phase, when specialized equipment is used which is not generally used in blueberry production. As well, economies of scale may dictate that having a custom operator do the clearing might indeed be less expensive than a grower doing it himself. The least possibility for custom provision would appear to be in the harvesting period – mechanical harvesters are only used during the harvest period, and it is not likely that a producer would own more harvesters than required for his/her own crop. It might be difficult to find a producer who would provide custom services at the time harvest is required, increasing the risk that the harvest would not be completed during the best period.

It should be noted that the main benefit of a custom operator is the elimination of the need for the grower to purchase his/her own equipment. From an operational standpoint, it would seem risky for a grower not to own the equipment required to service his/her farm. However, the risk may be acceptable in the short term if the financial benefits are so dramatic.

3.3 Production Phase

The input to the production model, with respect to both the base scenario and variations, is identical to that of the development model.

The main purpose of the production model is to determine sustained income, sustained cash flow, break-even points for both cash and income, and returns on investment. These data are shown graphically for the base scenario, and in a tabular format for the variations.

Figure 3.4 shows cash flow and net income over the development/production periods. The model shows first positive cash flows and income in Year 7. The breakeven point for net income after tax is Year 12, and the operation breaks even on a cash basis in Year 11. Sustained positive cash flow above $20,000 is reached in Year 11. Sustained positive net income after tax above $20,000 is reached in Year 9. Long-term cash flow and net income after tax are between $20,000 and $24,000. This indicates that a 100-acre farm could provide a modest living if there were no other sources of income.

Return on investment (ROI) was calculated at three different points – 10 years, 15 years and 20 years. A Net Present Value (NPV) was calculated for each period, using an 8% discount rate. A resale value of $1400/acre was assumed for leasehold land and $1500 for freehold land. These prices are not based on random sampling of sales figures, but on opinions of NBDARD and FCC officials, thus cannot be considered as definitive. They represent the sale value of fully producing blueberry land – land after at least 10 years of production. No salvage price was assumed for equipment, for simplicity. We also calculated the Net Present Value Ratio (NPVR), which is used to compare different investment options – this consists merely of the NPV divided by the amount originally invested (the cash input, in our model). Along with the ROI, we calculated the payback period on both a cash and net income after tax basis. This is the year in which the cash flows (or net income flows) balance at zero.

Figure 3.4 – Cash Flow and Net Income – Base Scenario

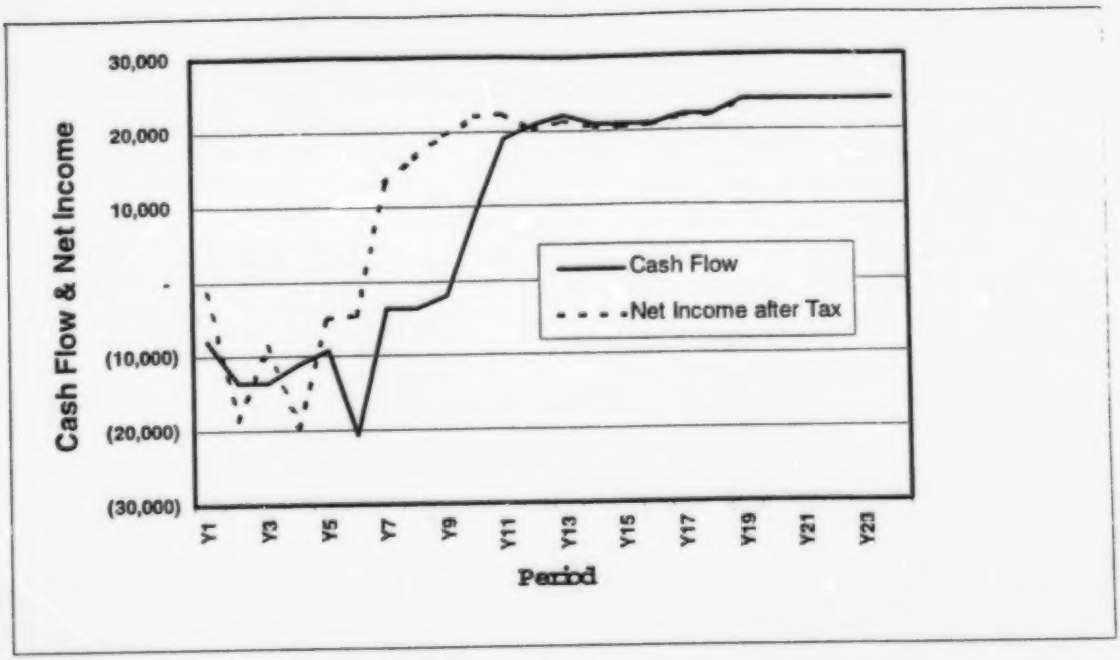


Figure 3.5 shows the Returns on Investment and payback periods for the base scenario and variations. The ROI data show conclusively that, if resale value is included in the calculation, development of a blueberry farm is a worthwhile investment – all NPV values obtained save one were positive. However, the payback data confirm the findings of the development model – blueberry production must be thought of as a long-term investment. Both cash and net income breakeven points were more than 10 years in most cases – the exception being the custom operators scenarios.

Figure 3.5 – ROI Data – Variations in Production

Scenario	Year 10		Year 15		Year 20		Cash	Net Income
	NPV	NPVR	NPV	NPVR	NPV	NPVR	Breakeven in Year	Breakeven in Year
Base Scenario	6,833	6%	24,343	23%	38,516	36%	14	10
Land held privately	3,479	3%	20,934	17%	34,980	29%	15	10
Yield increased by 20%	37,624	45%	67,387	80%	89,076	105%	11	8
Yield decreased by 20%	-27,087	-20%	-22,529	-17%	-17,298	-13%	20	14
Add'l Pruning in Year 3	4,656	4%	21,641	20%	35,814	33%	14	10
Custom Operators	75,688	275%	99,458	362%	115,670	421%	7	5
Custom Ops (15% increas	45,977	98%	65,363	139%	78,528	167%	11	6
Custom Ops (25% increas	46,665	95%	63,459	130%	74,749	153%	11	7
Clearing Cost $600	27,988	32%	45,381	52%	59,555	68%	12	10

The following comments deal with each variation as compared with the base scenario.

Land Held Privately – This scenario confirms the findings of the development model, that there is an investment cost to freehold land as opposed to leasehold land. The investment returns in all periods were less than those received in the base scenario. In addition, the cash breakeven point was 15 years, 1 year beyond that of the base scenario.

Yield Variations – As would be expected, yield increases had a positive effect on investment returns and shortened the payback times. Yield decreases reduced investment returns and increased payback times. It is important to note that a 20% decrease in yields brought the NPV values in all periods below zero, indicating that the "breakeven" yield point for the model enterprise is only slightly below that of the base scenario.

Additional Pruning in Year 3 – This served to decrease investment returns slightly over the long run. Overall, the model shows that yield increases due to an additional pruning would have to be higher to justify this practice.

Use of Custom Operators – All three of these scenarios showed dramatic improvements in both ROIs and net income payback periods. This, in combination with the dramatically improved cashflow situation during development, would indicate that the use of custom operators is beneficial in both the short and long term, assuming that yield does not suffer due to quality of cultural practices. Again, however, we point out that long-term sustainability concerns exist with the use of custom operators – the risk of not being able to access a service when required must be weighed against the financial benefits of the service itself.

Clearing Cost $600 – As would be expected, reduction in the clearing cost (whether due to land type, efficiencies or government assistance) dramatically increases the investment returns. Cash breakeven is two years less than that of the base scenario – this is expected, as the clearing cost is a one-time cost which assumes all of the reduction in cash input.

4. Development Opportunities

4.1 Custom Services

As the results of the previous chapter indicate, there appears to be a definite role for custom services in the development phase of blueberry production. However, the form of provision of these services merits further discussion.

The most attractive opportunity for custom operator usage appears to be in the land clearing phase. This requires specialist equipment which is only used once in the course of blueberry production, at the very outset. Depending on the equipment used, there can be considerable economies of scale. A custom provider using relatively expensive, specialized high-production land clearing equipment such as tree harvesters, wood loaders and mulchers can clear land for a lower price than a single grower using a tractor, chainsaw and stump-puller. It can also be done more rapidly, which is important in the development phase.

Use of custom operators for cultural practices appears to have benefits and drawbacks. The main benefit is the elimination of the need for the producer to purchase all equipment required for these practices – the capital costs saved result in a dramatic effect on the bottom line which is relatively independent of the unit cost of the custom service provided. However, we reiterate that, unless the custom operator can be scheduled at the grower's discretion, the risk of not being able to source the service required when it is required could impact on short-term crop yields and long-term sustainability of the enterprise.

This constraint is most evident in the harvest period. As the harvest period is only about 3 weeks long, it would appear that almost all growers would be harvesting in the same period, thus reducing the opportunities for growers to provide custom services to other growers. This problem with equipment availability indicates that it is preferable for the grower to have his/her own harvesting equipment.

The benefit of custom providers can also be inferred from the survey results – of the 14 growers interviewed who had been in the business five years or less, nine of them reported using custom services at some point in their operation. Assuming these are "rational consumers", we can conclude that there is a role for these services in the industry.

4.2 Pollination

Interviews with both producers and NBDARD officials indicate that pollination of blueberry plants may become more difficult or more expensive in the near future, for several reasons:

- There are only approximately 1500 hives in the region at present – the remainder are imported from Québec. As the bearing blueberry acreage in the region is approximately 10,000 acres and rising, it is clear that more hives could be accommodated easily. At present, the shortfall is partially made up by rental of hives from Québec.

- Prices to rent Québec hives may rise in the near future from the present cost of approximately $70 per hive (this cost includes rental plus expenses), due to competition for hives for blueberry pollination from the Lac St. Jean area.
- A scarcity of hives in the Acadian Peninsula region itself could drive up rental prices in that region, as producers bid up the price to obtain the few hives available.

Either a scarcity or a shortage of hives will have an adverse affect on blueberry production – the former by driving up the rental price, and the latter by reducing the number of hives available for pollination purposes. An increase in the number of hives available locally would benefit the industry.

Pollination presents a good opportunity for custom provision. Despite the NBDARD WBI initiative directed towards increasing the number of hives available in the area, blueberry producers have not utilised the program extensively. This is due to several reasons:

- Most blueberry producers have another occupation besides blueberry production. Adding beekeeping as a third occupation may not be desirable due to the time involved.
- Activities in beekeeping require time to be spent in the spring, when blueberry producers are busy with their land.
- Efficient beekeeping requires considerable knowledge and is inherently risky – inclement weather or operator error can kill colonies. Blueberry producers may not want to take the risk.

Although some blueberry producers do keep their own bees, evidence from other agricultural industries suggests that encouragement of a "specialist" beekeeping industry may be a more rapid and efficient way of developing additional hive capacity. The requirements of the canola industry are an example: pollination of canola requires about 2 hives per acre. The size of canola fields demands several hundred hives, and it is preferable for producers to get their hives from one or a few beekeepers, to avoid dealing with too many suppliers. This demands larger beekeeping operations than "cottage" type operations.

Current rental prices for hives are $65/hive for blueberry pollination, and $95/hive for canola pollination. Beekeepers can pollinate both crops in the same year with the same hives due to a separation in the pollination periods. Costs of setting up and preparation for pollination activities are about $400/hive, and annual maintenance (not including labour) is about $50/hive. Although a detailed study of costs of production in the beekeeping industry are beyond the scope of this study, a cursory analysis of production at the margin shows that, without any assistance programs or revenue from sale of honey, breakeven can be achieved in 5 years and the 10-year NPV is over $300/hive.

There are several ways in which the beekeeping industry could be further encouraged:

- Creation of a pollination beekeeping "demo" project. If this was done on an industrial scale (say, 800 hives), the project could be made self-supporting by rental of the hives for pollination purposes. The project could also be used to train prospective beekeepers and would be an opportunity for research into pollination issues specific to the northeast New Brunswick region. The salmon aquaculture demonstration farm run by the New Brunswick Salmon Grower's Association is a good example of this approach.

- Other crops also require pollination – canola is only one example of a crop currently grown in New Brunswick which requires pollination. Other potential crops include other berries (including cranberries) and other oilseeds such as sunflowers. The pollination industry could be encouraged in the long term by the encouragement of other crops requiring pollination – this would help considerably to develop a sustainable pollination industry.

4.3 Other Cost Savings

In general terms, anything that reduces the input costs (be they capital equipment costs or expendable input costs) and does not adversely affect yield quantities or quality will reduce the investment and cash flow requirements of the enterprise and increase the return on investment and overall sustainability.

The use of production input and machinery syndicates merits discussion. A syndicate which would buy the expendable inputs such as fertilizer, pesticides and herbicides would gain cost advantage through the bulk purchase of these inputs and the elimination (if it were done on a not-for-profit basis) of the profit margin of arm's-length suppliers. However, the syndicate would have to invest in the facilities required for storage and handling of these inputs, as well as account for the staffing and administration costs of what is, essentially, a separate business. It is likely that the only savings would be the profit margin currently enjoyed by private suppliers; if this is assumed to be a competitive industry, these would be in the region of 10% to 15%. When these savings are diluted by the additional costs of equipment and labour to deliver the inputs to the field, the net savings to the grower would be less. The risk and effort involved in setting up a syndicate of this sort may not justify the potential savings to the grower.

A machinery syndicate holds much more promise, especially if the form of the syndicate is carefully thought out. As noted above, the main benefit of custom service provision is the elimination of equipment capital costs early in the enterprise. By the same token, reduction of these costs would have a beneficial effect on the bottom line.

One possible form of syndicate is a "closed" syndicate, where several (or a score or more) growers join together to purchase the equipment required. This equipment would then be available to these growers only. The syndicate could be run on a "time-share" basis, where growers each have a right to, say, a week each year with a particular piece of equipment. Scheduling could be done either by negotiation or drawing lots. The numbers of pieces of each type of equipment would be dependent on the length of the period in which it is used and the productivity of the equipment. For example, if 8 growers need a total of 32 days use of a fertilizer spreader in a two-week period, 3 spreaders are required. Thus, the cost to each grower is reduced to 37.5% of the cost of each grower having his/her own spreader.

Advantages of this form of syndicate are that equipment availability is guaranteed at some time to each grower, and that the rules of the syndicate can be agreed within the member growers and are thus relatively flexible. Disadvantages are that the syndicate members must agree in advance on what equipment is to be purchased, where it is to be stored and how it is to be maintained.

Another syndicate form is an "open" syndicate, or equipment brokerage. In this form, a central equipment registry would be set up, and growers who own their equipment could register their inventory and the times in which each piece could be available for use to other syndicate members.

Growers who require that piece of equipment could then book it and pay a pre-determined or negotiated price for the rental.

An open syndicate may be more suitable to Acadian peninsula growers. Our surveys indicated that many of the producers were also involved in other agricultural or forestry activities, and had at least part of the equipment inventory required prior to their entry into the blueberry industry. An open syndicate would allow them to benefit from their existing inventory while reducing the need to purchase other equipment.

Advantages of this system include:

- The possibility of its' being a "virtual" syndicate. Equipment could still be owned, housed and maintained by individual growers, eliminating the need for additional capital investment. The syndicate itself could simply consist of a website (or bulletin board, if growers are not generally web-capable) accessed by growers to determine equipment availability and costs and to book usage;
- The cost of setting up the syndicate consists of the cost of setting up the registry and publicizing it. There are no capital facilities required;
- The open syndicate benefits both new and well-established growers. New growers avoid the initial high cost of equipment, while well-established growers are able to capitalize on their inventory;
- An open syndicate can include closed syndicates within it. For example, four growers could split the cost of a tractor, then register that tractor for use by other growers, blocking out the times in which the closed syndicate requires it; and
- The syndicate does not need to be limited to the blueberry industry. Much of the equipment (tractors, fertilizer spreaders, sprayers) are used in other agricultural endeavours.

Disadvantages include:

- The possibility that growers may not want to rent their equipment to strangers. This constraint could be avoided by having the owner specify that renters use his services along with the equipment – the registry would, in effect offer both equipment and custom provider services;
- The possibility that a grower may not be able to source a particular piece of equipment when it is required; and
- The learning curve that growers will have to endure each time they use an unfamiliar piece of equipment.

5. Financing Programs

Prior to 1996, development of the wild blueberry industry was catalysed by a series of five-year federal/provincial co-operation agreements, which included grant subsidies for land clearance. Since then, development assistance has switched to programs focusing on interest alleviation instead of subsidy incentives. These programs require the grower to have substantial equity in order to qualify for the loans under the programs. Many growers do not have this equity.

A summary of the nature and features of development and loan programs currently being offered by the NBDARD, the FCC, the federal government and commercial banks can be found below.

5.1 Existing Programs

New Brunswick Enhanced Wild Blueberry Initiative (WBI) – This program is designed to assist in the development of the wild blueberry and associated pollination industries. There are three components – assistance is given for land expansion, purchase of mechanical harvesters, and purchase of pollination units (Honey Bee and Alfalfa Leafcutter bees and equipment). Assistance consists of a 3-year interest buydown for approved projects and, if FCC financing is used, a potential principal repayment deferral of up to five years (three years for harvester purchases). Loans are secured by the assets of the grower. In the case of land expansion, these assets can include the value of the land or its lease after improvements have been made. However, the FCC will only lend on a percentage of the value of the land just after the improvements have been made (typically, 60%-75% of an assumed value of $500/acre), and does not recognize the future value of the asset once the land is in full production. Although this is an understandable policy for a commercial lender (the FCC has to limit its risk in order to operate) it means growers are able to source a lower percentage of their development financing in the form of debt than if the future value of the land was taken into account. The remainder of the financing must be supplied by the grower.

The main advantage of this program is that it allows new entrants and growers expanding their operations to defer their financing costs and repayment of principal until after one or two harvests. However, as we see in the development model, the first few harvests are not generally large enough to provide enough positive cash flow required to service the debt and continue with appropriate cultural practices. In the base scenario, this cash flow is not achieved until Year 8.

NBDARD New Land Purchase Program – Under this program, the Agricultural Development Board will purchase freehold land on behalf of a grower, then lease it back to the grower for up to five years. At the end of the lease period, the grower must purchase the land from the Board. Annual lease payments are $1 for the first two years of the lease, 5% of the purchase price for subsequent years, and the remainder of the purchase price in the final year. Like the WBI above, this program is designed to allow the grower to develop land and get some cash flow from initial crops prior to paying the full purchase price.

NBDARD Crown Land Lease Program – Crown land may be leased from the Department for the purpose of agricultural production. At the present time, lease payments are set at $0 for the first five years, $6.07/acre for the sixth year, $8.10/acre for years seven and eight, and $10.12/acre for subsequent years. The leases run for 10 years if the land has not been surveyed, 20 years if a proper land survey has been completed.

This program is the most popular method of gaining access to land among new entrants, due mainly to the low lease costs (especially in the first five years). Its utility is confirmed by our models, which show both short and long-term advantages over the Land Purchase Program. Although data are scarce, anecdotal evidence suggests that the resale value of the leases approach that of freehold land. In our models, we assumed $1400/acre for the resale value of fully producing leasehold land, and $1500/acre for similar freehold land.

It should be noted that crown land not previously under the management of NBDARD is made available for lease through the Dept. of Natural Resources and Energy, and there is a stakeholder review process required prior to approval. The process of obtaining crown land can therefore take some time. This is discussed further below.

NBDARD New Entrant Financing Program – This program is designed to assist qualified new entrants to the agricultural sector. Required qualifications include either a degree in agriculture and two years experience, or a diploma in agriculture and five years experience. Applicants can borrow up to $500,000 for a new farm and buildings (with an additional 20% of the amount available by way of an interest-free "establishment" loan), or the lesser of 80% of the appraised value or the purchase price of an existing farm. Repayment consists of:

- 5% of the principal payment in Years 1 and 2;
- 5% of the principal payment plus 5% interest in Years 3 and 4; and
- 5% interest and the remainder of the principal in Year 5.

Like the previous programs, this program is designed to defer most of the capital cost until after the first few crops, when cash flow from the crops can assist in repayment of the loan. The maximum value of the loan is based on the original value of the farm assets, and does not take the future value of those assets into account.

NBDARD Perennial Crop Establishment Program – The Agricultural Development Board may grant a mortgage loan for the conversion of ineffectively utilized land into land used for the production of a perennial crop. The initial term of the loan (the "establishment" period) ranges from three to five years. Terms are:

- 5% interest for the first three years;
- Interest at the Provincial lending rate for years four and five;
- No payment required during the establishment period;
- Capitalization of interest accumulated during the establishment period; and
- Full payment of the loan plus interest in year five.

Again, this is a mortgage loan program – the loan amount is based on the present value of the assets at the time of the loan approval, and does not take the future value of those assets into account. As it is a mortgage program, it is not applicable to leasehold land.

The preceding loan programs all share three common aspects:

- The purpose of the programs is to defer large capital outlays until revenue from crops can assist in repayment;

- The maximum amount of assistance is based on a percentage of the present value of the assets available as security. If the grower does not have acceptable net worth (regardless of the cash available to put into the enterprise) he/she will not get loan financing; and
- The grower assumes all risks of development through the required provision of personal assets as loan security.

5.2 Farm Credit Corporation Programs

The Farm Credit Corporation (FCC) is a crown corporation offering products and services to farmers and small/medium agribusinesses. Family farms are a large part of their client base, although they also support farmer-controlled diversification and value-added initiatives from agriculture.

As a crown corporation, the FCC is not an aid organization per se. FCC sources its loan capital on the open money market and charges commercial interest rates – there are no interest buybacks available. However, their products and services are designed specifically for the agricultural and agri-business sector, and as such provide a better "fit" to this sector than the larger commercial banking sector.

Security requirements on FCC loan programs are flexible. The FCC will consider freehold mortgages, leasehold mortgages, negotiable assets or equipment as security. However, all loans must be fully secured – although the FCC looks at future earnings as one of the criteria for granting loans, full coverage by existing assets is required. The FCC does accept crown land leaseholds as security. If a crown land leasehold mortgage is used, the FCC requires a non-disturbance agreement to be signed by the NBDARD.

National Dealer Equipment Financing Program - This chattel mortgage loan program allows farmers to finance equipment purchases (both new and used) of all makes and types of equipment when bought through a dealer. It assists dealers who do not have their own financing programs in place, and offers farmers a choice in financing arrangements outside what is offered by a particular dealer. Features include:

- Financing of up to 75% of the purchase price, including taxes;
- Variable and open fixed rate loans with terms between two and seven years; and
- No administrative fees.

This is a chattel mortgage loan program (the equipment purchased is the loan security) and does not offer interest buybacks or principal/interest deferrals.

Agristart Family Farm Loan
Agristart 1-2-3 Grow Loan
Agristart Payday Loan

This family of loans is oriented primarily to the transfer of farm properties between generations (although it is not limited to transfer within a family) and to assist farmers in starting or expanding an operation.

The **Family Farm Loan** enables the FCC to act as a "go-between" between buyer and seller – it allows the buyer a low down payment and amortization of up to 25 years, and it allows the seller to

either receive the proceeds immediately or receive the purchase price over a 5 year period. This product is not utilized much in the blueberry industry.

The **Agristart 1-2-3 Grow Loan** is oriented towards producers starting or expanding operations. It offers principal and interest deferrals, and considers the future value of the operations as part of the approval process. However, due to its similarity to the NBDARD WBI program (except for the lack of interest buydown provisions), this product is not utilized extensively in the blueberry industry.

The **Agristart Payday Loan** allows producers and prospective producers to access development capital based in part on the cash flow from non-farm income. Although this loan requires security as described above, the presence of an income stream allows higher leverage on that security – up to 90% of property asset value and 80% of equipment value can be lent. Again, uptake of this program is low within the blueberry industry – this may also be due to the WBI program.

Plant Now – Pay Later Loan - This product is oriented to established fruit producers (including blueberry producers) who wish to renovate or expand their operations. It has the same security requirements as the other products, but offers principal and interest deferrals for the first three growing seasons, and an additional two years of interest-only payments. It can be applied to crown land through leasehold mortgage security. It has little or no uptake in the blueberry industry – again, this may be due to the WBI program.

Shared-Risk Mortgage – This mortgage program is structured to partially protect producers from interest rate fluctuations – changes in rates are shared equally between the FCC and the borrower. Although this program is applicable to the blueberry industry (particularly for land purchases), it is not utilized by producers in the industry.

Farm Builder Construction Loan – This loan is oriented towards farm construction projects. It offers deferred principal and interest payments until construction is complete, access to loan funds on a drawdown basis to reduce interest exposure and the ability to convert to any of the other applicable FCC programs upon project completion. This program is not used in the blueberry industry – this may be due to the lack of building requirements in the production process.

5.3 Other Programs

Farm Improvement Loans – Under the Farm Improvement and Marketing Cooperatives Loans Act, the federal government offers 95% guaranteed loans to established farmers for a variety of purposes, including clearance/upgrading of freehold or leasehold land, purchase or upgrading of equipment, construction, moving and maintenance of buildings, Borrowers must make a down payment of at least 20% of the total amount required for the project at hand. This program is only available to established producers – it is not available to new entrants (producers must be able to show at least one year's income from agricultural activities to qualify). FIMCLA loans are available through most of the major commercial banks, including the Royal Bank, Scotiabank, CIBC, Toronto-Dominion, la Banque National du Canada and the Bank of Montreal. They are also available through some credit unions.

Net Income Stabilization Program - This federal program is designed to stabilize the income of farmers who may experience fluctuations from year to year in crop or product price levels. The farmer may input up to 3% of his/her net income (to a maximum of $7500) for the year. The

government matches the farmer's deposit in a matching account. Accounts accrue interest at competitive interest rates, plus a 3% interest bonus contributed by the government on after-tax deposits. All interest accrues tax-free within the program, although proceeds are taxed when they are withdrawn from the program. As a net income is required to participate in the program, it would not be applicable to blueberry producers in the development period. Although it could be used by producing blueberry farmers, the uptake of this program is reportedly poor in northeastern New Brunswick.

Other Programs – The major banks have loan programs designed specifically for the agriculture market, including operating loans, medium-term loans for equipment and other items, and long-term loans for capital acquisition and development projects. However, these are private sector "for profit" loan programs, and are not "development" or "aid" programs per se. They are, generally, commercial interest rate, fully secured loans – useful for improvement of cash flow only.

5.4 Discussion of Existing Programs

Figure 5.1 shows an analysis of the preceding programs with regards to the features offered to or required by blueberry producers. As the diagram shows, most of the programs offer cash flow improvements, and most are available to new entrants. However, the diagram also clearly shows the fact that risk reduction is not built in to many programs. In fact, the FCC shared risk mortgage is the only program available to new entrants which offers risk reduction, and in this program, the only risk dealt with is the risk of interest rate fluctuations.

It should be noted that the producer assuming all risk is not necessarily a bad thing – there is no reason why others should have to assume risk in the enterprise if they are not specifically benefiting from the proceeds. However, the producer must assess the risk/reward ratio and decide whether the risk of entrance to or expansion in the industry is worth the reward. The point made here is that the current risk/reward ratio is high enough to discourage new entrants from joining and existing producers from expanding if their equity is substantially at risk.

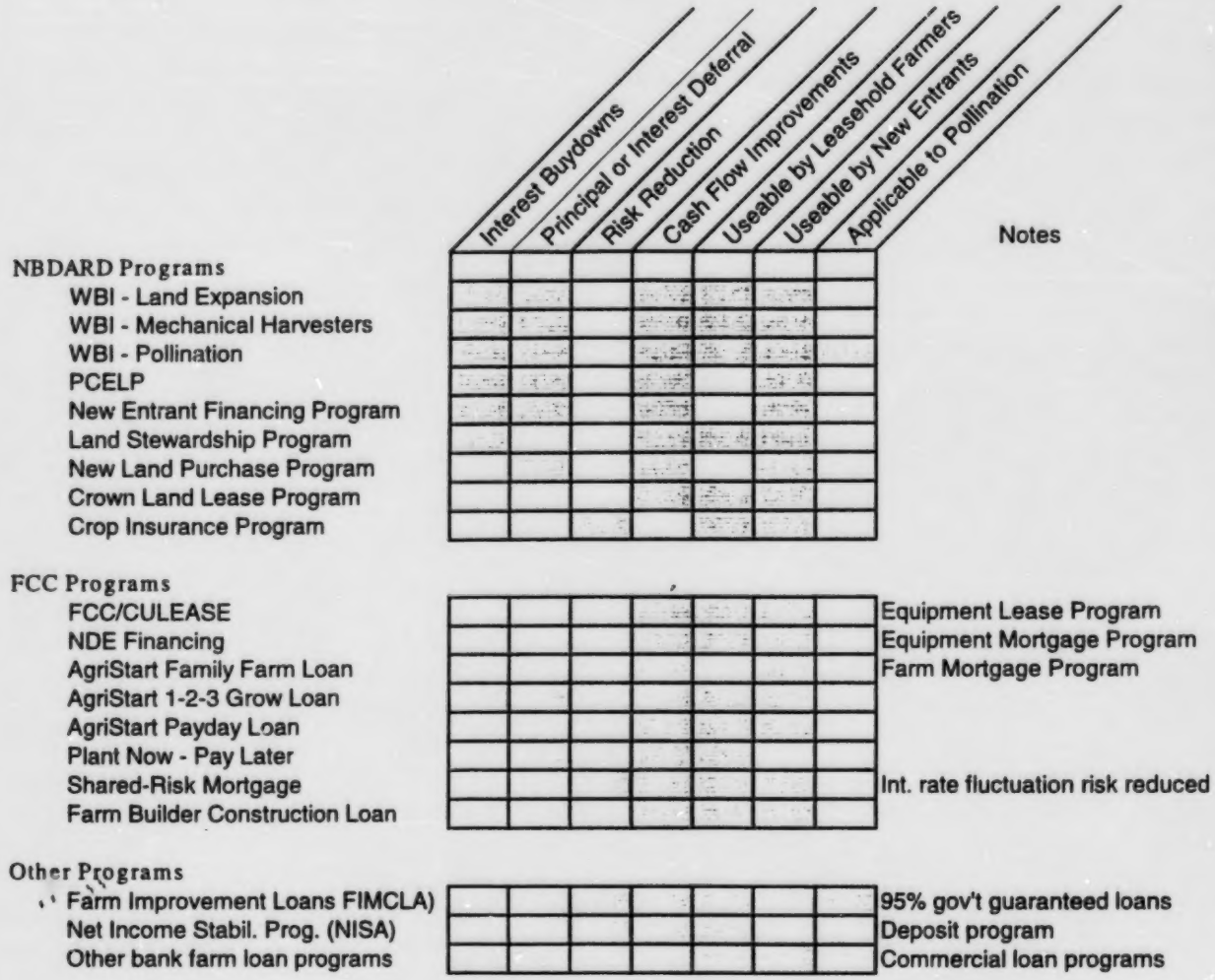
The industry appears to be over-supplied with loan programs – so many, in fact, that some are not used. Programs offered run the gamut from soft interest rate, deferrable principal loans to standard commercial loans. It is interesting to note that, perhaps due to the soft loan terms offered in the Wild Blueberry Initiative, uptake of similar FCC programs has not been high in the blueberry industry.

It is also very important to point out that producers must have the equity to qualify for any loans applied for – if they do not have the substantial personal equity required, these loan programs will be completely unavailable to them.

Although all of the loan programs offered are successful in relieving growers who do qualify of the necessity of large capital outlays early in the development phase, there are few other benefits. The WBI offers some interest buydowns, and the WBI, the FCC 1-2-3 Grow Loan, and the FCC Plant Now-Pay Later loan offer principal and/or interest deferrals. These and all other loan programs except the FIMCLA loans require full security - the grower in all cases assumes the risk of development, by pledging existing assets as security to the loan. The grower must have the equity to qualify for both the development program loans and the private sector loans which may be required for equipment purchase. As determined by our development model and the balance sheet data received from FCC, a new entrant would have to pledge most of his/her equity as security in order to

obtain the necessary financing for development. This is a major constraint to new entrants, both from the point of view of the equity required and the risk involved.

Figure 5.1 – Gaps Analysis



Another problem (not too evident from Figure 5.1) is the issue of financing activities on crown land. As the producer does not have title to the land, complications arise in the application of financing programs. For instance – although the FCC will accept a leasehold as security for a loan, they require that the lessor sign a "non-interference" agreement for the term of the loan. This severely constrains the lessor and increases their risk as they lose substantial control over the land. As noted in the WBI,

the lessee must conform to a five-year development plan for the land in order to qualify – the non-interference agreement compromises this aspect of the program. Also, the addition of a third party (the lessor) to the loan agreement can cause delays and administrative problems.

Where the lease is being offered as security for a leasehold mortgage loan, there is not much that can be done about this problem when there are three parties involved. If the NBDARD were to offer the loans directly, the agreement reverts to a bipartite agreement, and the problem is eliminated. However, it is unlikely that NBDARD could restructure itself as a lending organization. The simplest way to avoid the loss of control over the leased land is to offer loan guarantees on land development loans – this will be discussed at length below.

Although the FIMCLA loans are government guaranteed and available to existing producers, they are not applicable to new entrants. This means that new entrants have no way of reducing their considerable risk to entry into the industry. The following sections suggest ways around this problem.

5.5 WBI Land Expansion Loan Modification

One very easy way of reducing producer's risk is to modify the existing WBI Land Expansion program to include loan guarantees by government. This would have several effects:

1. The new entrant would not have to pledge most of his/her assets in order to qualify for a land development loan. This reduces the risk of entry considerably, and might make the risk/reward ratio acceptable.

2. The "freeing" of equity from the land expansion loan requirement would allow new entrants to leverage that equity for purchase of equipment, if desired. Additionally, freeing of the equity would give new entrants more "breathing room" in the case of poor harvests or price shocks.

3. Elimination of the security requirement from the loan approval process in the case of leasehold land would eliminate the need for the lessor to sign non-interference agreements. Although a loan guarantee does increase the risk to NBDARD, retention of the ability to require performance benchmarks reduces this risk. A loan guarantee would also reduce the requirement of producers to pay mortgage fees.

Risk to the government of adding loan guarantees to the program is actually quite low. As the loan proceeds are being used to upgrade crown land in most cases, the government risk is reduced due to the increased value of the land. This assumes, of course, that the government applies the usual performance requirements of the WBI. Therefore, for a small increase in risk to the government, a large amount of risk is removed from the new entrant.

It may be desirable to include, with the loan guarantee, the requirement of a down payment on the land expansion loan, similar to the provisions of the FIMCLA program. This would ensure that the producer has some vested interest in the process, and will pursue it with due diligence.

The WBI Land Expansion program is also available to existing producers, and they presumably would benefit from loan guarantees as well. However, as existing producers are eligible for FIMCLA loans, they already have a risk reduction tool in place.

Development model results indicate that a loan guarantee on land development loans would reduce total required equity by $119,000 to $139,000, or 54% of that of the base scenario. This is a considerable improvement. Cash input requirements and ROIs remain the same in both scenarios. However, lending agencies will still look at the total debt servicing capability of the producer in order to grant further loans (for equipment, for example), even though the land development loan is guaranteed.

5.6 Modified Lease Scenario

Both the equity required and the risk involved can be dramatically reduced if all stakeholders recognise one of the main benefits of land development for blueberry production – the increased future value of the land once it is in full production. Under this scenario, the provider of assistance would act, in a sense, as a "development partner" in the enterprise, and could potentially share in the increased value of the land on which the enterprise is based. Consider the following scenario:

- NBDARD implements a program to clear land and offer the cleared land to growers on a lease or lease/purchase plan. This plan would recoup the costs of clearing after a suitable period (say, 10 years). The following lease costs are based on achieving an NPV of 0 at 6% interest, using $900/acre as the clearing cost (similar to the base scenario):

Year		Lease
From	To	Cost/Acre
1	1	250.00
2	6	50.00
7	10	175.00

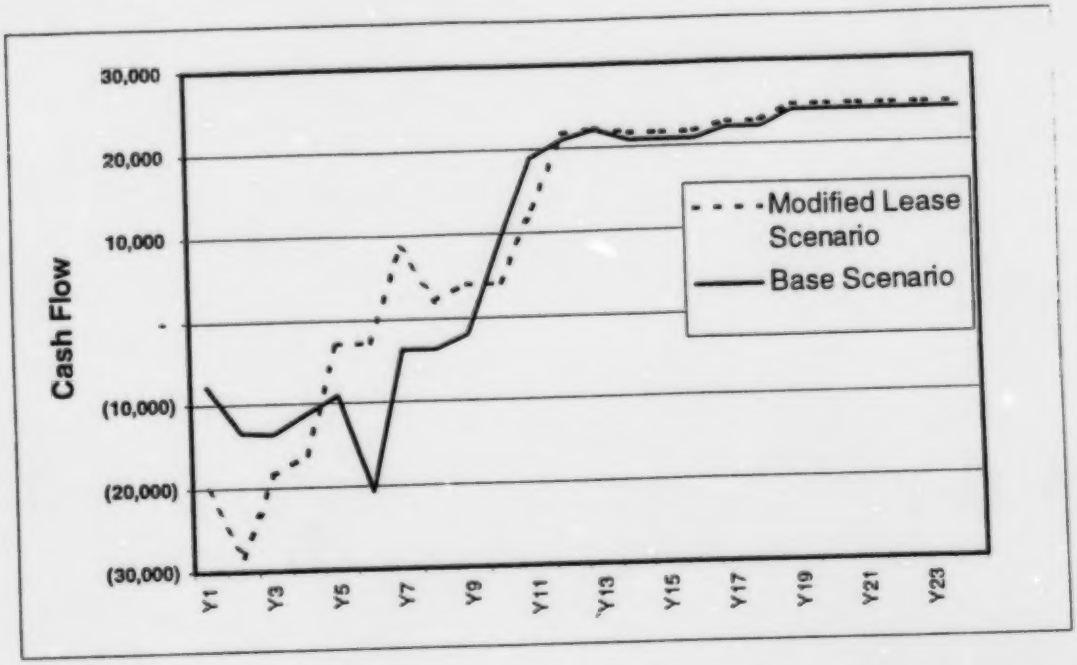
- Risk to the NDBARD is minimal – both the clearing and the cultural practices of the grower will add value to the land. Even if no cultural practices at all are performed, the land value will have increased. The $250/acre initial lease payment serves to further reduce the risk to the Department. If the land is not sold, it can be leased to another grower who may be in a better position to properly develop the land beyond the clearing phase.
- The grower's risk is considerably reduced, mainly by reduction of the equity required for the overall development process. The following model results, when compared to the base scenario, confirm this:

Figure 5.1 – Comparative Statistics of Modified Lease Program

Aspect	Base Scenario	Modified Lease	% of Base Scenario
Cash Input Req'd	$106,000	$105,000	99%
Total Equity Req'd	$248,000	$129,000	52%
10 Year NPV	$6,833	$990	88%
Cash Breakeven	14 years	14 years	
Income Breakeven	10 years	14 years	

The cash flow characteristics of the modified lease scenario are more than acceptable, as can be seen in Figure 5.2.

Figure 5.2 – Comparative Cash Flows – Modified Lease and Base Scenarios



As shown, net cash flow is positive approximately three years earlier than in the base scenario. Sustained positive cash flow above $20,000 occurs about the same time as the base scenario. Examination of this scenario in the development phase shows that the $105,000 cash input is required in the first five years.

Benefits of this program include:

- Dramatically reduced equity requirements on the part of the grower, making the enterprise both more sustainable and more attractive to new entrants;
- Development of further land is constrained more by cash flow than by equity;
- An earlier positive cash flow during development; and
- The land clearing phase would essentially be a capital works program – giving substantial employment in the region.

There are several possibilities to this type of program – it could be converted to a lease/purchase program by the addition of the undeveloped land cost to the lease terms. Variation of the lease terms

could provide further benefits to the grower, depending on whether the Department recovers financial or economic costs through the lease.

The major drawback to a program of this sort is the high capital input required by the Department. If 2000 acres/year are to be developed, the cost of the program could be as high as $1.3 million per year (this is at the outset – costs are reduced as lease payments are received). However, the program could be designed to break even using borrowed funds, if provincial deficit levels allow. It should be noted that this program could be considered as a capital investment program, and included under the government capital budget rather than the operations budget.

6. Discussion and Recommendations

The main conclusion of this study is that investment in the wild blueberry industry has to be thought of as a long-term investment from a financial point of view. The industry is relatively capital-intensive and cash breakeven points are not reached until, in some scenarios, after 10 years of development and production. However, blueberry land, once developed, has substantially more value than undeveloped land, due to its greatly improved revenue generation capacity.

Most NBDARD development programs available to growers consist of interest rate and principal repayment deferral on secured loans. The grower is required to have enough equity at the loan approval stage to qualify for the loan without considering the future earnings of the farm – in many cases, this requires new entrants to pledge most or all of their major assets as security for equipment and land development loans. In other words, the grower assumes all risk in the development phase. In addition, the substantial capital investment required can leave growers highly leveraged and without much "breathing room" in the event of poor crops or external financial shocks. As debt/equity levels rise from the outset of the development period to peak between two and four years later, inadequate financial planning can leave growers unaware of the responsibilities and susceptible to financial problems. These may manifest themselves as the failure to perform the recommended cultural practices.

It might be instructive to view industry development requirements from a more holistic perspective -- financial aspects of an industry or enterprise are only one aspect of its development. In order to have successful development, agricultural enterprises need:

- **Financial Capital –** As the preceding section shows, there are a multitude of programs available to the industry. However, the vast majority of them require considerable security. In the case of prospective entrants with low personal equity, this eliminates their possibilities of entrance. This may not be a bad thing – a certain level of financial strength could be viewed as a necessity for entrance. Even if the producer has enough equity to qualify, however, the risk of pledging most of that equity weighed against the rewards of the industry forces many potential entrants away from the industry. When compared to the risk/reward ratio of other industries, most potential entrants would likely choose other industries. We consider that making this risk/reward ratio acceptable is the main challenge facing the NBDARD – two potential solutions offered are land development loan guarantees and the modified lease scenario discussed earlier;
- **Knowledge/Human Capital –** There do not appear to be many constraints to development from this regard. Although some producers felt they did not have enough access to either information or agronomist services, they did agree that, when actively sought, both desired technical information and services were available. Our surveys did indicate a lack of financial knowledge about the industry. Although FCC and the commercial banks do offer financial advice, this advice is on a "reactive" basis – loans officers will comment on business plans in the course of loan approvals. General information for new entrants on the financial aspects of the blueberry industry prior to their entry could be useful;
- **Land -** With the release of the Tracadie Range, thousands of additional acres will become available. However, several producers expressed concern at the length of time it took to have leases approved, and at the fact that they did not get the acreage they requested. This appears

to be due in part to the process – DNRE must first release the land to NBDARD, who then leases it to the producer. NBDARD may be able to streamline the process by applying for large one-time transfer from DNRE for the purpose of future development as blueberry land, rather than doing this transfer on an individual basis as lease applications come in; and

- **Inputs** – Blueberry production requires fertilisers, pesticides, herbicides and pollination. The inadequate supply of pollination bees was the only constraint identified in this area. We do not feel that the problems here are financial in nature – it is more likely that the blueberry industry by itself will not justify the establishment of a healthier, sustainable pollination industry.

The following points summarise the findings and recommendations of this report.

- The NBDARD should develop financial programs which recognise and reduce the risk/reward ratio facing new entrants to the industry. The simplest way to do this is through guaranteed loans. Another way is through the modified lease scenario of the last chapter - NBDARD could consider the development of blueberry land as a joint venture between itself and the growers, with risk and reward shared by both. Both of these scenarios dramatically reduce the financial risk of the growers, while providing what may be an acceptable risk/reward ratio to the NBDARD. The modified lease scenario would require substantial capital input by the NBDARD, although the returns from a properly designed program could justify the input.

- The use of custom providers appears to benefit growers in the development period. Cash input and net equity requirements are substantially reduced, mainly by the avoidance of the capital required for equipment purchase. However, there are sustainability problems associated with the long-term use of custom providers – if a grower does not have the basic equipment required for long-term production, he/she is dependent on others for the basic cultural practices of the farm. Therefore, we consider the use of custom providers to be a short-term strategy only – growers should try to have the equipment required to carry out all cultural practices.

- Equipment syndicates or an equipment and custom provider "brokerage" could be useful in providing some operational liquidity in this section of the industry. The pooling of resources could also be useful in reducing the capital input required for equipment. A further benefit of any cooperative or syndicate is the potential for communication between growers – sharing of information and peer education would be a definite advantage.

- Growers stated both a need and a desire for more education initiatives (both on the technical and business aspects of the operation), and more access to information and industry experts. The increase in the ratio of growers to NBDARD agronomists in the Acadian Peninsula region was remarked upon several times in our surveys. These statements are somewhat at odds with our own impression – information appears to be readily available when requested from the Department, and survey respondents agreed that they did not have any trouble getting an agronomist when they actively tried. However, there may be some room for improvement in this area.

- Although we did not survey growers on their internet capabilities, familiarity with the Internet is growing rapidly, and some growers volunteered the information that they use the Internet on a regular basis. Assuming that a reasonable number of growers are web-capable, a website specifically dedicated to grower's concerns could be a very economical and useful

way of both communicating and disseminating information. For example, a website could include:

- An equipment and custom service brokerage;
- A web-based version of the Wild Blueberry Production Guide;
- All NBDARD and FCC development program information;
- Ongoing weather updates (useful for planning of activities);
- Contact info (both e-mail and phone/fax/mail) for NBDARD agronomists; and
- A grower's "forum" for exchange of information and opinions. This would be especially useful for those seeking advice – a grower could draw from the experience of all growers available on-line.

NBDARD already has a website containing some of the above items. However, it is likely that the uptake would be greater if a website were developed and publicized by the grower's associations themselves. Some of the costs of development and operation could be underwritten by potential advertisers, such as input and equipment suppliers, custom providers and processors.

- A synthesis of the surveys and the model results indicates that the industry would be better served if more growers were encouraged to "professionalize" – to make blueberry production their main income source rather than a secondary source. We do not mean to discount the extensive growing experience of many of the producers interviewed, but the level of effort of a producer growing blueberries as a part-time second-income occupation is not going to be the same as one who depends on blueberry production for his/her main income. Our models indicate that a modest income (over $25,000 after tax) can be generated by cultivation of 100 acres; a 200 acre or larger farm would provide a comfortable income. In addition, it was reported that growers with large acreages received a better price per pound for their product (the "bonus" price, which could be around $.05/lb).

- Related to the need for professionalism is the need for more education on the business side of the enterprise – growers (especially new entrants) have to be aware of the capital and cash flow requirements, especially in the development phase. Our surveys indicate that some growers were not very familiar with the cash flow requirements – this may be part of the reason that some growers, even though they qualify for development and equipment loans, are not able to complete their cultural practices as required.

- It is very important that, as NBDARD brings more land into blueberry production, access to pollination does not become a constraint to development. This could be problematic in the Acadian Peninsula region, where blueberries are one of the few commercially cultivated crops requiring pollination. NDBARD officials report that financial incentives for blueberry producers to keep their own bees have not been well received – this could be an indication that the constraints to pollination industry growth are not financial in nature. It is possible that beekeeping could be promoted by the promotion of other crops requiring pollination. Some other crops requiring pollination include cranberries, other berry crops and oilseeds such as canola and sunflowers. An ecological approach may be more successful than financial support in developing a sustainable pollination industry – if there were enough crops (in both volume and variety) being grown in the area to support a healthy pollination industry, entrepreneurs would likely provide it. In the short term, however, encouragement of the industry could take the form of a "demonstration apiary", which could provide a forum for pollination research and a training venue for potential beekeepers. This apiary could be

made self-supporting through the use of the bees for commercial pollination purposes. It is not necessary that this be a government initiative – a coalition of crop producer's organisations could do the job, using existing programs for financial support.

- More economic benefits from the industry could be realized by encouraging value-added industries. At the present time, the only processing done in New Brunswick is cleaning, freezing and bagging of the product, which is then shipped outside the province to value-added processors and end markets. If more indigenous value-adding industries (such as bakeries, wineries and condiment manufacturers) could be encouraged to use the crop, more economic benefits could be realized.

In conclusion – world demand for blueberries is rising. Recent research findings indicate that blueberries are ranked #1 among fruits and vegetables in anti-oxidant power, which is sure to increase the popularity of the fruit. In New Brunswick, product prices have risen more than 50% over four years even as yield is increasing, indicating that current crop levels are not meeting the demand. Export markets are expanding, and the future looks good for industry expansion.

APPENDIX A

TERMS OF REFERENCE

1.0 BACKGROUND

The wild blueberry industry represents one of the fastest growing agricultural sectors in the province. This is due to favourable market conditions that are likely to continue for a long time, and due to several unique production advantages such as thebio-regional exclusivity of the crop, relatively good precipitation and relatively good access to pollination services. One of the most promising aspects for blueberry development in this region will occur with the opening of the Tracadie Firing Range in the next two years. Despite these advantages, the industry remains capital intensive and so it requires a sound financial footing in order to capitalize on these new opportunities. The following synopsis should put these requirements in perspective.

Acreage in wild blueberries topped 20,000 in 1998, and the bearing acreage of nearly 10,000 acres (blueberries crop in alternate years) cropped over 11 million pounds for a value of over $7 million. Much of the growth in the industry over the last several years has occurred in the Northeast, averaging about 750 new acres a year during the 1990s (1150 acres last year). This amounted to about 11,000 acres in 1998, about half of which produced a 6.2 million pound harvest worth about $4 million. Since new acreage can take several years to reach peak productivity, yields on the existing acreage alone should top 11 million pounds in the next five years.

The opening of the Tracadie Range should result in the release of approximately 9,000 acres of land suitable for blueberry production within the next 5 years, with an additional 6,000 acres in the longer term after the timber is harvested. However, developing this land is quite capital intensive and requires several years to break even given the perennial nature of the crop. Obtaining adequate financing presents a unique challenge given the low employment and financial equity in this region. For this reason, the Department of Agriculture and Rural Development has worked closely with the private sector and industry to develop and fine-tune programs to enhance this development.

Prior to 1996 the development of the industry was catalyzed by a series of 5-year federal/provincial "Cooperation Agreements". With the establishment of the Perennial Crop Establishment Loan Program (PCELP) in 1992, the Department of Agriculture initiated a shift to a system of interest alleviation, instead of subsidy incentives. However, PCELP is unable to accept improvements to leased Crown Land as part of the applicant's equity position, thereby precluding much of the new Northeast blueberry land. Thus, in 1997, NBDARD partnered with the Farm Credit Corporation (FCC) to offer an interest rate buy-down for 3 years (NBDARD) and deferred payments on principal for up to 5 years (FCC), the latter allowing for the inclusion of improvements to crown leased land as equity. Eligible costs for this program were adjusted in 1999 to reflect the higher development costs on wooded sites. However, there remains a problem for a number of potential developers who do not have the personal equity to qualify for the loan amount necessary to bring the land into full production.

The upcoming expansion of the industry in the Tracadie Range, as well as the continued increase of our production base, has highlighted certain problems that need to be addressed. Despite the expansion of the past few years, we have witnessed a level of difficulty among producers regarding the ability to secure financing of their development projects. This problem has shown itself as the inability to follow through with the proper management of their fields as required to become viable. NBDARD is evaluating the development of a fund to offer some assistance with this situation.

The need for a better picture of the industry is critical - a picture that includes the present financial situation, the future financial needs of the industry and how existing programs meet these needs.

2.0 OBJECTIVES

1) To create a financial profile of a cross-section of wild blueberry growers in Northeast New Brunswick.

2) To develop a cost of production model for both developing new acreage (up to the end of the first cropping cycle) and on-going operational costs under several scenarios:

   a) Crown Land versus private holdings
   b) Custom services versus owner/operator
   c) A range of harvest levels (to be specified)

3) To define the minimum financial resources and expected returns on investment for wild blueberry farms under the same case scenarios (above) from development through operating stages.

4) To identify potential opportunities for economic spin-off activities (i.e. custom services, beekeeping, cooperative purchasing of inputs, etc).

5) To evaluate existing public and private financing tools and determine what gaps exist.

6) To make other observations and/or recommendations that would be beneficial to the development of the wild blueberry industry in the Northeast.

3.0 DELIVERABLES

The stakeholders are seeking to contract with a qualified team of consultants to evaluate the financial position of the wild blueberry sector in the Northeast of New Brunswick. The team would be expected to conduct:

1) A financial analysis of the debt/equity positions of 30 wild blueberry growers in the Northeast representing the following categories (NBDARD will provide the appropriate lists from which samples can be drawn):
   a) Existing growers who have farmed at least 100 acres of wild blueberries for at least 10 years;
   b) New entrants who have opened at least 100 acres of wild blueberry land since 1997 and have completed all the requisite cultural practices in a timely fashion;
   c) New entrants who have opened at least 100 acres of wild blueberry land since 1997 but have not completed all the requisite cultural practices in a timely fashion.

2) A Cost of Development model, based on input from the same growers, for developing new acreage (up to the end of the first cropping cycle or Year 5) under the following assumptions:
   - 100 acres of leased Crown Land;

- owner/operator providing his own cultural practices (mowing/burning, pesticide application, etc);
- yields of 700 lbs/acre in Year 3, 1200 lbs/acre in Year 5.

A series of partial budgets will also be required to reflect the model's sensitivity to changes in the assumptions, as follows:

- 100 acres of privately held land;
- Custom operators providing cultural practices (as described above);
- yield timing varied to 1000 lbs/acre in Year 4, 1500 lbs/acre in Year 6 (and therefore additional burn conducted in Year 3);
- yield amounts varied plus or minus 20% in Years 3 and 5.

3) A Cost of Production model, based on input from existing growers, that captures the costs and revenues from producing wild blueberries under the following assumptions:
   - 100 acres of leased Crown Land;
   - owner/operator providing his own cultural practices (mowing/burning, pesticide application, etc);
   - yields of 1800 lbs/acre every other year.

   Partial budgets will also be required to reflect the model's sensitivity to changes in the assumptions, as follows:
   - 100 acres of privately held land;
   - custom operators providing cultural practices (as described above);
   - yield amounts varied plus or minus 20%.

4) Using the information from the Cost of Development and Cost of Production models, develop a set of minimum financial resources, expected returns on investment, and breakeven points (both cash and income basis) for potential wild blueberry producers and show how these change as the basic assumptions are varied, as above.

5) With the synthesis of both the Cost of Production model and the financial profile of producers developed in Item 1, identify any potential opportunities that might arise for:
   - economic spin-offs (custom services, etc); and
   - cost savings (for example, cooperative purchasing of inputs and machinery syndicates and the critical mass needed to make these arrangements feasible).

6) Evaluate existing NBDARD and FCC financing programs (to be provided) to determine how well they meet the need to develop the land from theTracadie Range given the financial status of the identified growers and the Cost of Development model spelled out above.

7) Provide any other observations and/or recommendations that arise from the analyses completed above that might be beneficial to future development of the wild blueberry industry in the Northeast. As an example, comment on the viability of 100 acre versus 200 acre sections.

APPENDIX B

PRODUCER'S MODEL

Producer's Model – Notes on Financial Statements

1. Balance Sheet

Cash & Short-term Investments – This is the available cash in the enterprise. It consists of the previous period's cash plus net cash flow during the period.

Accounts Receivable – Money due to the producer, but not paid. This consists of the previous period's accounts receivable plus total revenue from the income statement less the first three items of the Cash Inflows section of the Cash Flow statement.

Fixed Assets (net of depreciation) – Depreciation is calculated in the "Fixed Assets" sheet and deducted from assets each period.

Equipment – The net holdings of equipment less equipment depreciation.

Buildings – Net holdings of buildings less building depreciation

Land – All freehold land. (Land does not depreciate, so none is taken).

Land Improvements – The aggregate of all clearing activities on leased or freehold land, as input into the "Operations" sheet. This is the sum of all actual expenditures, not the increased appraised value of the land.

Accounts Payable – Amounts incurred but not paid. This consists of the previous period's accounts payable, plus all operating expenditures as recorded in the Income Statement, less all operating expenditures as paid from the Cash Flow Statement. Note that admin expenses cannot be deferred in this model.

Short-Term Loans (Line of Credit) – This line shows negative cash balances. It is assumed that the producer has access to an unsecured line of credit to allow some negative cash flow.

All Long Term Loans – The balance on all long-term loans. This consists of the previous period's long-term loans plus the current period's loan capital received less the current period's principal payments.

Total Producer's Equity – This consists of the initial equity as input in the "Main" sheet, plus the sum of all the net incomes per period up to the current period.

Balanced? – This is a tool to ensure that items have been properly entered in the Income statement and Cash Flow statement. It is the difference between the Total Assets and the Total Liabilities plus Producer's Equity. The sheet is balanced when the difference is zero, and no numbers appear in this row.

2. Income Statement

Sale of Product – *The sum of* income from the harvest and bonus income for the period, as calculated in Table O-2 of the "Operations" sheet.

Custom Service Provision – Income from custom service provision by the producer, as recorded in Table O-3 of the "Operations" sheet.

Crop Insurance Indemnity Received – Payment on claims made under the crop insurance program, as recorded on the "Gov't Programs" sheet.

Other Income & A/R Paid – All other income and accounts receivable paid, as recorded in Table O-3 of the "Operations" sheet.

Land Lease Costs – Lease payments as calculated from lease information input on the "Gov't Programs" sheet. This item includes payments made under the Land Lease Program and the Land Purchase Plan

Pruning **Fertilization** **Pesticide** **Herbicide** **Pollination** **Harvesting**	These are costs for cultural practices as calculated on the "Operations" sheet.

Equipment Maintenance – The "Fixed Assets" sheet includes input capability for average maintenance costs for equipment and buildings. These are summarized and presented here.

Building Maintenance – See above.

Accounting – Costs per period for accounting services, as input on the "Operations" sheet.

Legal – Costs per period for legal services, as input on the "Operations" sheet.

Depreciation on Equipment – Equipment is depreciated on a declining balance basis, using 30% per year.

Depreciation on Buildings – Buildings are depreciated on a declining balance basis, using 10% per year.

Crop Insurance – Premiums for the Wild Blueberry crop insurance program, as determined for the Year 2000 crop. The model automatically adjusts premiums to account for any indemnities paid.

Other Insurance – Premiums each period for any other insurance carried. This is input in Table O-4 of the "Operations" sheet.

Short Term Loan Interest – Interest on the line of credit (or, on negative cash balances). The interest rate is set on the "Main" sheet.

Long Term Loan Interest – Aggregate interest in each period on all long-term loans. This is a calculated value.

Bank Charges **Office Expenses** **Rent** **Utilities & Telephone** **Wages/Benefits** **Misc.**	verage charge in each period for each of the items to the left. Input for ese is in Table O-4 of the "Operations" sheet.

Net Income (Loss) before Tax – Tal Revenue less Total Expenses

Income Tax – Calculated on the Ne income (Loss) above. The model uses one of two algorithms depending on whether sole proprieto hip or incorporated corporate form is chosen on the "Main" sheet. Tax rates are combined federa provincial rates for New Brunswick in 2000.

Net Income (Loss) after Tax – Inc e (Loss) before tax less Income Tax.

Opening Retained Income/Earnin – Retained Income/Earnings from the previous period.

Closing Retained Income/Earning – Opening Retained Income/Earnings plus Net Income (Loss) after Tax.

3. Cash Flow Statement

Harvest & Bonus Income – The su of income from the harvest and bonus income for the period, as calculated in Table O-2 of the "Operations" sheet, and deferred if required.

Custom Service Provision – Incom from custom service provision by the producer, as recorded in Table O-3 of the "Operations" sheet.

Crop Insurance Indemnity Paid – ayment on claims made under the crop insurance program, as recorded on the "Gov't Programs" shet.

Other Income & A/R Paid – All oth income and accounts receivable paid, as recorded in Table O-3 of the "Operations" sheet.

FCC Land Expansion Loan – Mon received from lender under the Wild Blueberry Initiative Land Expansion Program. (Input on Gov't Programs" sheet).

FCC Harvester Loan – Money rece ed from lender under the Wild Blueberry Initiative Harvester Loan Program. (Input on "Gov't Progams" sheet).

Other Loans – All other money received from private sector lenders (input on the "Fixed Assets" sheet).

Equipment Purchases Building Purchases Land Purchases	Purchase price paid for all equipment, buildings and land as input on the "Fixed Assets" sheet.

Land Clearances – Price paid for land clearances, as calculated from data on Table O-1 of the "Operations" sheet.

Pruning Fertilization Pesticide Herbicide Pollination Harvesting	These are payments made for cultural practices as calculated on the "Operations" sheet and deferred as required.

Equipment Maintenance – The "Fixed Assets" sheet includes input capability for average maintenance costs for equipment and buildings. These are summarized and presented here.

Building Maintenance – See above.

Land Lease Costs – Lease payments as calculated from lease information input on the "Gov't Programs" sheet. This item includes payments made under the Land Lease Program and the Land Purchase Plan

Short Term Loan Interest – Interest on the line of credit (or, on negative cash balances). The interest rate is set on the "Main" sheet.

Long Term Loan Interest – Aggregate interest in each period on all long-term loans. This is a calculated value.

LT Loan Principal - Equipment – Aggregate of all principal payments on equipment loans. Calculated from the "Fixed Assets" and "Gov't Programs" sheets.

LT Loan Principal - Buildings – Aggregate of all principal payments on building loans. Calculated from the "Fixed Assets" sheet.

LT Loan Principal - Land – Aggregate of all principal payments on land loans. Calculated from the "Fixed Assets" sheet.

Income Tax Paid – Copied from the Income Statement.

Other Admin Expenses – Aggregate of administration expenses from the Income Statement.

Net Cash Flow – Cash inflows less cash outflows.

Cash at Start of Period – Cash at end of previous period.

Cash at End of Period – Cash at start of period plus net cash flow.

User's Manual

This model is set up as a series of pro-forma financial statements (balance sheet, income and cash flow statements) hooked to input modules used for input of data relating to fixed assets, government programs, and operations/admin costs. All user-input data can be input using the linked modules; the user does not have to input data directly into the financial statements. However, the financial statements are available for viewing if required.

The user is advised to start out in the "Main" module.

Main Module

Here, the first choice to make is whether the model is to report in quarterly periods, or in annual periods. A dialog box (**Period Selection**) is offered in which the user can toggle between these two modes. The model will automatically adjust interest rate, depreciation and loan payment information depending on whether quarterly or annual periods are chosen. Column headings will adjust depending on the reporting period chosen. Users should input data per period shown in the headings for each individual item. Note that changing from quarterly to annual periods will likely require significant changes in the data input in the input modules – especially the "Operations" module, where data in generally input by period.

The **Income Tax Regime** dialog box allows the user to choose between income tax calculations based on a sole proprietorship or corporation. The model automatically calculates income tax on the net income on an annual basis (regardless of whether quarterly or annual periods are chosen). The model also accounts for income loss deferral for up to seven years, as is currently allowed under the Income Tax Act.

The **Initial Status** area allows the user to input balance sheet information describing the producer's financial position prior to the start of the model. Most of these items are self-explanatory. However, please note that the input of outstanding loan balances here does not complete the required input – the user must still enter the loan information (periods left, interest rate, remaining principal, etc.) in Tables FA-1 to FA-3 of the **Fixed Assets** module.

Below the Initial Status area, there are several more input cells. The **Line of Credit Interest Rate** is the interest rate charged on negative cash balances (negative working capital). The **Long-Term Borrowing Rate** is the interest rate used to calculate Net Present Value – all actual loan interest rates are input separately for each loan. The **Farm Salvage Value** is the value of the farm once it is fully operating – it is used as the salvage value at the end of the reporting range in the NPV calculations.

Once the **Main** module has been completed, users should move to the **Fixed Assets** module.

Fixed Assets Module

This module contains input table for equipment, buildings and land purchases. Users can specify all aspects of fixed asset ownership, including financing arrangements, depreciation, average maintenance and estimated lifespan.

Equipment details are input in **Table FA-1** – input details follow by column:

- Purchase Price - users should input the full purchase price (not including tax, if this is reimbursed) in the Purchase Price column;
- Period Purchased - input the period in which the item was purchased. This should be a number, not "Q1Y2" or similar – the period number can be obtained by looking at any of the tables or financial statements which include both the period number and the period name. If the user is inputting a loan already existing at the start of the model lifespan, use 0 (zero) for the purchase period;
- Down Payment – the down payment, if there is no loan required, should be the same as the Purchase Price. Otherwise, input the actual down payment. If the Period Purchased is 0, the down payment should also be zero;
- Interest Rate – input the interest rate for the loan;
- No. of Years Financed – input the number of years (not periods) over which the loan will be repaid.
- Approx Maintenance/Year – input the approximate maintenance required per year (do not include disposables such as mower blades, fuel, etc.)
- Lifetime (Years) – Input the approximate lifespan of the equipment. This figure will be used to calculate maintenance payments.

The model calculates loan principal and interest payments and depreciation.

Building purchases are input in **Table FA-2.** All input is similar to the Table FA-1, and will not be repeated here.

Land purchases are input in **Table FA-3.** This table is for private purchases only – purchases under NBDARD programs should be input in the **Government Programs** module.

To account for the fact that the market value of land or leaseholds is not the same as the "accounting" value, a Land or Leasehold Resale Value is included in the Fixed Assets module. This allows users to input the approximate value of the land at various stages of the development process. This table is only available in the development model.

Government Programs Module

This module has input tables for NBDARD and FCC government programs. Input tables for the Land Lease Program and the Land Purchase Program are self-explanatory.

Input tables for the Wild Blueberry Initiative require input of loan information similar to the Fixed Asset tables. The input table for mechanical harvesters is identical to the Equipment table in the Fixed Asset module. The model calculates interest and principal deferrals as specified in NBDARD factsheets on the WBI, and inputs the results to the financial statements.

Input tables for the Crop Insurance Program require a choice of insurance coverage – 50%, 65% and 85% coverages are offered by the program. The model calculates all premiums from that point, and adjusts the premiums if any claims are made under the policy. The user can also input indemnities received under the program .

Operations Module

This module allows input of data for all physical processes (cultural practices) and other miscellaneous activities involved in running a blueberry farm.

Table O-1 – Cultural Practices - This table requires input of acreages under cultivation under a number of different cultural practices (clearing, pruning, fertilization, pesticide and herbicide application). The last row allows the input of the number of beehives used in any one period. The table requires input of unit costs for each activity in the **Unit Cost** column, and input of the number of periods that payment for that activity is deferred in the **Payment Deferral** column. The model then calculates total costs for each activity and inputs to the financial statements. If a deferral is specified, actual payment for the activity is deferred by the number of periods specified (the incurred cost is recorded in the period in which it occurs in the Income Statement, but actual payment is not recorded until the deferred-to period in the Cash Flow Statement).

Table O-2 – Harvesting – Input the acres harvested in the period of harvest, the average yield/acre and the price received per lb. for the product. If there is a bonus price applicable, this may be input as well. The cell just to the right of the "bonus price/lb" cell can be used to specify the deferral of receipt of the bonus price. The cost of harvesting is also a one-time entry in the cell just to the right of the "cost of harvesting" cell. The model then calculates net revenue at harvest and inputs it into the financial statements.

Table O-3 – Miscellaneous – This is a table used for input of other items, such as other income, income from custom service provision by the grower, and payment of accounts receivable.

Table O-4 – Administration - This table is for input of the approximate administration costs of the enterprise. Costs should be estimated on an annual basis; the model will adjust financial statement input if required for quarterly periods.

General

Once all data is input, the user can go to the Charts page to review the results. For the model runs in our report, we adjusted the initial financial position input ("Main" module) to limit the model to a maximum 75% debt/equity ratio at the time of any one loan, and to a maximum $10,000 negative cash balance (we assumed a grower would have access to a $10,000 unsecured line of credit).

Please note that the NPV results chart will not be accurate when the model is used in the quarterly reporting period mode.

APPENDIX C

BASE SCENARIO INPUT AND RESULTS

NE NB Blueberry Growers Study
Model of Development

Period Selection
- (•) Quarterly Periods
- ( ) Annual Periods

Income Tax Regime
- (•) Sole Proprietor
- ( ) Limited Company

User Notes:

This model is set up as a series of pro-forma financial statements (balance sheet, income and cash flow statements) hooked to input modules used for input of data relating to fixed assets, gov't programs, and operations/admin costs. All user-input data can be input using the linked modules; the user does not have to input data directly into the financial statements.

The first choices to make are self-explanatory in the checkboxes to the left. The model will automatically adjust interest rate, depreciation and loan payment information depending on whether quarterly or annual periods are chosen. Column headings will adjust depending on the reporting period chosen. Users should input data per period shown in the headings for each individual item. Note that changing from quarterly to annual periods will likely require significant changes in the data input in the input modules.

The initial status of the producer can be input in the form below. This describes the initial debt/equity position of the producer.

Current Assets		
Cash & Short-term Investments	106,000	Cash, GICs, assets readily converted to cash
Accounts Receivable		Money owing but not paid for product or services rendered.
Fixed Assets		
Equipment	-	The depreciated value of all equipment owned
Buildings		The depreciated value of all buildings owned
Land	142,000	The market value of all land owned.
Total Assets	248,000	
Current Liabilities		
Accounts Payable	-	Money owed but not paid
Income Tax Payable		Income tax owed but not paid.
Long-term Liabilities		
Long-term Loans		Principal balance remaining on all long-term loans, mortgages, etcs.
	-	
Total Liabilities	-	Note: Outstanding long-term loans should also be input into the model in TableS FA-1 To FA-3, using remaining principal balance and periods left in loan. Use "0" (zero) for Purchase Period, remaining lifetime for Lifetime, and no down payment
Equity Available as Security	248,000	

Line of Credit Interest Rate:	0.00%	Input annual interest rate on Line of Credit
Long-term Borrowing Rate:	8.00%	Used for calculation of ROI only
Rate of Interest on Cash Balances:	4.00%	Re-investment rate used for calculation of ROI only

NE NB Blueberry Growers Study
Model of Development
Fixed Asset Summary

Table FA-1

Equipment	Purchase Price	Period Purchased	Down Payment	Annual Interest	No. Years Financed	Approx. Maint/Year	Lifetime (Years)	Payment per Period	Debt/Equity in period
Tractor	21000	2	4200	8.00%	5	1000	15	1,027	0.10
Boom Sprayer	4400	8	880	8.00%	5	400	15	215	0.60
Mist Sprayer			0					0	
Flail Mower	7000	2	1400	8.00%	5	700	15	342	0.10
Brush Cutter	4000	2	800	8.00%	5			196	0.10
Quebec Harvesters			0					0	
Mechanical Harvester			0					0	
Tractor 2			0					0	
Fertilizer Spreader	4575	8	915	8.00%	5			224	0.60
Other			0					0	
Other			0					0	
Other			0					0	
Other			0					0	
Other			0					0	
Other			0					0	

Note: Do not use this table for equipment bought under the Wild Blueberry Initiative. Use WBI tables in Gov't Programs
WARNING - Use 0 for Down Payment if Period = 0

Table FA-2

Buildings	Purchase Price	Period Purchased	Down Payment	Annual Interest	No. Years Financed	Approx. Maint/Year	Lifetime (Years)	Payment per Period	Debt/Equity in period
Barn								0	
House								0	
Shed								0	
Outbuilding								0	
Other								0	
Other								0	
Other								0	

Table FA-3

Land Purchases Acreage	Purchase Price	Period Purchased	Down Payment	Annual Interest	No. Years Financed	Payment per Period	Debt/Equity in period
						0	
						0	
						0	
						0	
						0	
						0	
						0	

Do not use this table for land cleared under the NBDARD Wild Blueberry Initiative Use the WBI tables on the Gov't Programs sheet.

Do not use this table for land purchased under the New Land Purchase Program. Use the table on the Gov't Programs sheet.

Land or Leasehold Resale Value

Time	Value ($/acre)
Prior to 1st Crop	600
After 1st Crop	800
After 2nd Crop	1200
After 3rd Crop	1500

NE NB Blueberry Growers Study
Model of Development
Government Programs

Land Lease Program

Land Lease Summary

Acreage	Year Leased
50	1
50	2

Land Lease Program - Costs

Year		Lease
From	To	Cost/Acre
1	5	0.00
6	6	6.07
7	8	8.10
9	20	10.12

Lease costs are new in 1999, and reflect the change to a 20 year lease period.

NBDARD Land Purchase Program

Acreage	Cost/ Acre	Year Purchased

New Brunswick Enhanced Wild Blueberry Initiative

1. Land Expansion Loan

Note: Actual land clearances to be input on "operations" sheet. This table is for loan info only.

Item	Loan Amount	Period Awarded	Annual Interest	No. Years Financed	Debt/Equity In Period
Land Expansion 1	45000	3	0.08	5	0.35
Land Expansion 2	45000	7	0.08	5	0.65
Land Expansion 3					
Land Expansion 4					
Land Expansion 5					
Land Expansion 6					

2. Mechanical Harvesters (only those bought under WBI loan program)

Item		Purchase Price	Down Payment	Period Purchased	Annual Interest	No. Years Financed	Annual Maintenanc	Lifetime (years)	Loan Amount	Debt/Equity In Period
Harvester 1		24600	5000	10	0.08	5	2000	15	19600	0.75
Harvester 2									0	
Harvester 3									0	
Harvester 4									0	
Harvester 5									0	

Crop Insurance Program

Crop Insurance

- ○ 50% Coverage
- ◉ 65% Coverage
- ○ 80% Coverage

Indemnities Received

Period	1	2	3	4	5	6	7	8
Indemnity								

Period	9	10	11	12	13	14	15	16
Indemnity								

Period	17	18	19	20	21	22	23	24
Indemnity								

NE NB Blueberry Growers Study
Model of Development
Summary of Operations

Period

Table O-1: Cultural Practices

Activity	Unit Cost	Payment Deferral	Q1Y1 1	Q2Y1 2	Q3Y1 3	Q4Y1 4	Q1Y2 5	Q2Y2 6	Q3Y2 7	Q4Y2 8	Q1Y3 9	Q2Y3 10	Q3Y3 11	Q4Y3 12	Q1Y4 13	Q2Y4 14	Q3Y4 15	Q4Y4 16
Acreage Cleared/Period	900	0			50				50									
Acreage Pruned/Period	65	0					50				50				50			
Acreage Fertilized/Period	77	0									50				50			
Acreage Sprayed (Pesticide)	20	0																
Acreage Sprayed (Herbicide)	95	0									50				50			
Beehives Used/Period	67	0											50				50	

Table O-2: Harvesting

		Q1Y1	Q2Y1	Q3Y1	Q4Y1	Q1Y2	Q2Y2	Q3Y2	Q4Y2	Q1Y3	Q2Y3	Q3Y3	Q4Y3	Q1Y4	Q2Y4	Q3Y4	Q4Y4
Acres Harvested/Period												50				50	
Average Yield/Acre (lbs)												700				700	
Price/lb. @ Harvest												0.62				0.62	
Bonus Price/lb.	1																
Cost of Harvesting	0.09	3,150	-	-	-	-	-	-	-	-	-	3,150	-	-	-	3,150	-
Income @ Harvest		21,700	-	-	-	-	-	-	-	-	-	21,700	-	-	-	21,700	-
Bonus Income		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table O-3 - Miscellaneous

	Q1Y1	Q2Y1	Q3Y1	Q4Y1	Q1Y2	Q2Y2	Q3Y2	Q4Y2	Q1Y3	Q2Y3	Q3Y3	Q4Y3	Q1Y4	Q2Y4	Q3Y4	Q4Y4
Producer's Equity Investment																
Producer's Equity Repayment																
Other Income (other than blueberries)																
Income from Custom Service Provision																
Accounts Receivable (paid)																
Cash at end of Period (For Reference Only)	105,625	98,850	96,484	94,119	88,503	86,138	83,772	79,333	64,578	56,395	68,190	64,507	49,252	45,569	57,364	50,929

Total Cash required 0

Table O-4: Administration

	Approx. Cost/Year
Accounting	300
Legal	
Insurance (Other than Crop)	
Bank Charges	100
Office Expenses	200
Rent	
Utilities & Telephone	600
Wages/Benefits	
Misc.	300
Total Annual Admin Costs	1,500

Q1Y5	Q2Y5	Q3Y5	Q4Y5	Q1Y6	Q2Y6	Q3Y6	Q4Y6	Q1Y7	Q2Y7	Q3Y7	Q4Y7	Q1Y8	Q2Y8	Q3Y8	Q4Y8	
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Activity
50				50				50				50				Acreage Cleared/Period
50				50				50				50				Acreage Pruned/Period
																Acreage Fertilized/Period
50				50				50				50				Acreage Sprayed (Pesticide)
		50				50				50				50		Acreage Sprayed (Herbicide)
																Beehives Used/Period

Q1Y5	Q2Y5	Q3Y5	Q4Y5	Q1Y6	Q2Y6	Q3Y6	Q4Y6	Q1Y7	Q2Y7	Q3Y7	Q4Y7	Q1Y8	Q2Y8	Q3Y8	Q4Y8	Table O-2: Harvesting
		50				50				50				50		Acres Harvested/Period
		1200				1200				1800				1800		Average Yield/Acre (lbs)
		0.62				0.62				0.62				0.62		Price/lb. @ Harvest
																Bonus Price/lb.
-	-	5,400	-	-	-	5,400	-	-	-	8,100	-	-	-	8,100	-	Cost of Harvesting
-	-	37,200	-	-	-	37,200	-	-	-	55,800	-	-	-	55,800	-	Income @ Harvest
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Bonus Income

Table O-3 - Miscellaneous

Q1Y5	Q2Y5	Q3Y5	Q4Y5	Q1Y6	Q2Y6	Q3Y6	Q4Y6	Q1Y7	Q2Y7	Q3Y7	Q4Y7	Q1Y8	Q2Y8	Q3Y8	Q4Y8	
																Producer's Equity Investment
																Producer's Equity Repayment
																Other Income (other than blueberries)
																Income from Custom Service Provision
																Accounts Receivable (paid)
32,922	26,487	48,780	39,593	18,758	9,495	29,328	20,431	(37)	(8,655)	27,078	18,179	(1,849)	(10,028)	26,144	17,683	

NE NB Blueberry Growers Study - Development Model
Financial Statements

Balance Sheet

Initial State	Line Item	Period Q1Y1 1	Q2Y1 2	Q3Y1 3	Q4Y1 4	Q1Y2 5	Q2Y2 6	Q3Y2 7	Q4Y2 8	Q1Y3 9	Q2Y3 10	Q3Y3 11	Q4Y3 12	Q1Y4 13	Q2Y4 14	Q3Y4 15	Q4Y4 16
	ASSETS																
	Current Assets																
106,000	Cash & Short-term Investments	105,625	98,850	96,484	94,119	88,503	86,138	83,772	79,333	64,578	56,395	68,190	64,507	49,252	45,569	57,364	50,929
-	Accounts Receivable	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
106,000	Total Current Assets	105,625	98,850	96,484	94,119	88,503	86,138	83,772	79,333	64,578	56,395	68,190	64,507	49,252	45,569	57,364	50,929
	Fixed Assets (net of depreciation)																
-	Equipment	-	32,000	29,830	27,808	25,923	24,165	22,527	29,974	27,942	50,648	47,214	44,013	41,029	38,247	35,654	33,236
-	Buildings	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
142,000	Land	142,000	142,000	142,000	142,000	142,000	142,000	142,000	142,000	142,000	142,000	142,000	142,000	142,000	142,000	142,000	142,000
	Land Improvements (Clearing et al)	-	-	45,000	45,000	45,000	45,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000
142,000	Total Fixed Assets	142,000	174,000	216,830	214,808	212,923	211,165	254,527	261,974	259,942	282,648	279,214	276,013	273,029	270,247	267,654	265,236
248,000	**TOTAL ASSETS**	247,625	272,850	313,315	308,927	301,426	297,303	338,299	341,307	324,520	339,042	347,404	340,519	322,281	315,816	325,018	316,165
	LIABILITIES																
	Current Liabilities																
-	Accounts Payable	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Short-Term Loans (Line of Credit)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Income Tax Payable	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Total Current Liabilities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Long Term Liabilities																
-	All Long Term Loans	-	25,600	69,546	68,472	67,376	66,257	110,117	116,134	114,652	132,740	131,198	129,625	128,021	126,385	124,716	121,161
-	Total Long Term Liabilities	-	25,600	69,546	68,472	67,376	66,257	110,117	116,134	114,652	132,740	131,198	129,625	128,021	126,385	124,716	121,161
-	**TOTAL LIABILITIES**	-	25,600	69,546	68,472	67,376	66,257	110,117	116,134	114,652	132,740	131,198	129,625	128,021	126,385	124,716	121,161
	PRODUCER'S EQUITY																
248,000	**TOTAL PRODUCER'S EQUITY**	247,625	247,250	243,768	240,455	234,050	231,045	228,182	225,173	209,868	206,302	216,206	210,894	194,260	189,431	200,302	195,004
248,000	**TOTAL LIAB. & PRODUCER'S EQUITY**	247,625	272,850	313,315	308,927	301,426	297,303	338,299	341,307	324,520	339,042	347,404	340,519	322,281	315,816	325,018	316,165
-	Balanced?	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Q1Y5 17	Q2Y5 18	Q3Y5 19	Q4Y5 20	Q1Y6 21	Q2Y6 22	Q3Y6 23	Q4Y6 24	Q1Y7 25	Q2Y7 26	Q3Y7 27	Q4Y7 28	Q1Y8 29	Q2Y8 30	Q3Y8 31	Q4Y8 32	
																ASSETS
																Current Assets
32,922	26,487	48,780	39,593	18,758	9,495	29,328	20,431	-	-	27,078	18,179	-	-	26,144	17,683	Cash & Short-term Investments
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Accounts Receivable
32,922	26,487	48,780	39,593	18,758	9,495	29,328	20,431	-	-	27,078	18,179	-	-	26,144	17,683	Total Current Assets
30,983	28,882	26,924	25,099	23,397	21,811	20,332	18,953	17,668	16,470	15,354	14,313	13,342	12,438	11,594	10,808	Fixed Assets (net of depreciation)
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Equipment
142,000	142,000	142,000	142,000	142,000	142,000	142,000	142,000	142,000	142,000	142,000	142,000	142,000	142,000	142,000	142,000	Buildings
90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	Land
262,983	260,882	258,924	257,099	255,397	253,811	252,332	250,953	249,668	248,470	247,354	246,313	245,342	244,438	243,594	242,808	Land Improvements (Clearing et al)
295,905	287,369	307,704	296,692	274,155	263,306	281,660	271,384	249,668	248,470	274,432	264,492	245,342	244,438	269,738	260,491	**TOTAL ASSETS**
																LIABILITIES
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Current Liabilities
-	-	-	-	-	-	-	-	37	8,655	-	-	1,849	10,028	-	-	Accounts Payable
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Short-Term Loans (Line of Credit)
-	-	-	-	-	-	-	-	37	8,655	-	-	1,849	10,028	-	-	Income Tax Payable
																Total Current Liabilities
117,536	113,838	110,066	104,366	98,553	92,623	87,333	81,938	76,435	70,822	65,097	59,257	53,739	48,111	42,370	36,515	Long Term Liabilities
117,536	113,838	110,066	104,366	98,553	92,623	87,333	81,938	76,435	70,822	65,097	59,257	53,739	48,111	42,370	36,515	All Long Term Loans
																Total Long Term Liabilities
117,536	113,838	110,066	104,366	98,553	92,623	87,333	81,938	76,472	79,477	65,097	59,257	55,588	58,139	42,370	36,515	**TOTAL LIABILITIES**
																PRODUCER'S EQUITY
178,369	173,531	197,639	192,325	175,603	170,683	194,326	189,446	173,196	168,994	209,335	205,235	189,754	186,299	227,368	223,976	**TOTAL PRODUCER'S EQUITY**
295,905	287,369	307,704	296,692	274,155	263,306	281,660	271,384	249,668	248,470	274,432	264,492	245,342	244,438	269,738	260,491	**TOTAL LIAB. & PRODUCER'S EQUITY**
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Balanced?

Income Statement

Initial State

Line Item	Q1Y1 1	Q2Y1 2	Q3Y1 3	Q4Y1 4	Q1Y2 5	Q2Y2 6	Q3Y2 7	Q4Y2 8	Q1Y3 9	Q2Y3 10	Q3Y3 11	Q4Y3 12	Q1Y4 13	Q2Y4 14	Q3Y4 15	Q4Y4 16
REVENUE																
Sale of Product	-	-	-	-	-	-	-	-	-	-	21,700	-	-	-	21,700	-
Custom Service Provision	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crop Insurance Indemnity Received	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Income & A/R Paid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL REVENUE	-	-	-	-	-	-	-	-	-	-	21,700	-	-	-	21,700	-
EXPENSES																
Operating Expenses																
Land Lease Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pruning	-	-	-	-	3,250	-	-	-	3,250	-	-	-	3,250	-	-	-
Fertilization	-	-	-	-	-	-	-	-	3,850	-	-	-	3,850	-	-	-
Pesticide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Herbicide	-	-	-	-	-	-	-	-	4,750	-	-	-	4,750	-	-	-
Pollination	-	-	-	-	-	-	-	-	-	-	3,350	-	-	-	3,350	-
Harvesting	-	-	-	-	-	-	-	-	-	-	3,150	-	-	-	3,150	-
Equipment Maintenance	-	-	425	425	425	425	425	425	525	525	1,025	1,025	1,025	1,025	1,025	1,025
Building Maintenance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Operating Expenses	-	-	425	425	3,675	425	425	425	12,375	525	7,525	1,025	12,875	1,025	7,525	1,025
Administration Expenses																
Accounting	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Depreciation on Equipment	-	-	2,170	2,023	1,885	1,758	1,638	1,527	2,032	1,894	3,434	3,201	2,984	2,782	2,593	2,417
Depreciation on Buildings	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crop Insurance	-	-	-	-	-	-	-	279	-	279	-	279	-	279	-	279
Other Insurance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Short Term Loan Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Long Term Loan Interest	-	-	512	491	469	448	425	402	523	493	463	432	401	368	336	1,202
Bank Charges	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Office Expenses	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Rent	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utilities & Telephone	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Wages/Benefits	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc.	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Total Administration Expenses	375	375	3,057	2,888	2,730	2,580	2,439	2,583	2,930	3,041	4,272	4,287	3,760	3,804	3,304	4,273
TOTAL EXPENSES	375	375	3,482	3,313	6,405	3,005	2,864	3,008	15,305	3,566	11,797	5,312	16,635	4,829	10,829	5,298
Net Income (Loss) before Tax	(375)	(375)	(3,482)	(3,313)	(6,405)	(3,005)	(2,864)	(3,008)	(15,305)	(3,566)	9,903	(5,312)	(16,635)	(4,829)	10,871	(5,298)
Income Tax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NET INCOME (LOSS) AFTER TAX	(375)	(375)	(3,482)	(3,313)	(6,405)	(3,005)	(2,864)	(3,008)	(15,305)	(3,566)	9,903	(5,312)	(16,635)	(4,829)	10,871	(5,298)
Opening Retained Income/Earnings	-	(375)	(750)	(4,232)	(7,545)	(13,950)	(16,955)	(19,818)	(22,827)	(38,132)	(41,698)	(31,794)	(37,106)	(53,740)	(58,569)	(47,698)
Closing Retained Income/Earnings	(375)	(750)	(4,232)	(7,545)	(13,950)	(16,955)	(19,818)	(22,827)	(38,132)	(41,698)	(31,794)	(37,106)	(53,740)	(58,569)	(47,698)	(52,996)

Q1Y5 17	Q2Y5 18	Q3Y5 19	Q4Y5 20	Q1Y6 21	Q2Y6 22	Q3Y6 23	Q4Y6 24	Q1Y7 25	Q2Y7 26	Q3Y7 27	Q4Y7 28	Q1Y8 29	Q2Y8 30	Q3Y8 31	Q4Y8 32	Line Item
-	-	37,200	-	-	-	37,200	-	-	-	55,800	-	-	-	55,800	-	REVENUE
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Sale of Product
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Custom Service Provision
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Crop Insurance Indemnity Received
-	-	37,200	-	-	-	37,200	-	-	-	55,800	-	-	-	55,800	-	Other Income & A/R Paid
																TOTAL REVENUE
																EXPENSES
-	-	-	-	76	76	76	76	76	76	76	76	76	76	76	76	Operating Expenses
3,250	-	-	-	3,250	-	-	-	3,250	-	-	-	3,250	-	-	-	Land Lease Costs
3,850	-	-	-	3,850	-	-	-	3,850	-	-	-	3,850	-	-	-	Pruning
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Fertilization
4,750	-	-	-	4,750	-	-	-	4,750	-	-	-	4,750	-	-	-	Pesticide
-	-	3,350	-	-	-	3,350	-	-	-	3,350	-	-	-	3,350	-	Herbicide
-	-	5,400	-	-	-	5,400	-	-	-	8,100	-	-	-	8,100	-	Pollination
1,025	1,025	1,025	1,025	1,025	1,025	1,025	1,025	1,025	1,025	1,025	1,025	1,025	1,025	1,025	1,025	Harvesting
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Equipment Maintenance
12,875	1,025	9,775	1,025	12,951	1,101	9,851	1,101	12,951	1,101	12,551	1,101	12,951	1,101	12,551	1,101	Building Maintenance
																Total Operating Expenses
75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	Administration Expenses
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Accounting
2,253	2,101	1,958	1,825	1,702	1,586	1,479	1,378	1,285	1,198	1,117	1,041	970	905	843	786	Legal
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Depreciation on Equipment
-	279	-	279	-	279	-	280	-	-	-	281	-	-	-	282	Depreciation on Buildings
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Crop Insurance
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Other Insurance
1,131	1,059	985	1,809	1,695	1,579	1,852	1,747	1,639	1,529	1,416	1,302	1,185	1,075	962	847	Short Term Loan Interest
25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	Long Term Loan Interest
50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	Bank Charges
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Office Expenses
150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	Rent
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Utilities & Telephone
75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	Wages/Benefits
3,760	3,813	3,318	4,288	3,772	3,819	3,706	3,780	3,299	3,101	2,908	2,999	2,530	2,354	2,180	2,291	Misc.
																Total Administration Expenses
16,635	4,838	13,093	5,313	16,723	4,920	13,557	4,880	16,250	4,202	15,459	4,100	15,481	3,455	14,731	3,391	TOTAL EXPENSES
(16,635)	(4,838)	24,107	(5,313)	(16,723)	(4,920)	23,643	(4,880)	(16,250)	(4,202)	40,341	(4,100)	(15,481)	(3,455)	41,069	(3,391)	Net Income (Loss) before Tax
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Income Tax
(16,635)	(4,838)	24,107	(5,313)	(16,723)	(4,920)	23,643	(4,880)	(16,250)	(4,202)	40,341	(4,100)	(15,481)	(3,455)	41,069	(3,391)	NET INCOME (LOSS) AFTER TAX
(52,996)	(69,631)	(74,469)	(50,361)	(55,675)	(72,397)	(77,317)	(53,674)	(58,554)	(74,804)	(79,006)	(38,665)	(42,765)	(58,246)	(61,701)	(20,632)	Opening Retained Income/Earnings
(69,631)	(74,469)	(50,361)	(55,375)	(72,397)	(77,317)	(53,674)	(58,554)	(74,804)	(79,006)	(38,665)	(42,765)	(58,246)	(61,701)	(20,632)	(24,024)	Closing Retained Income/Earnings

Cash Flow Statement

Initial State	Line Item	Q1Y1	Q2Y1	Q3Y1	Q4Y1	Q1Y2	Q2Y2	Q3Y2	Q4Y2	Q1Y3	Q2Y3	Q3Y3	Q4Y3	Q1Y4	Q2Y4	Q3Y4	Q4Y4
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	CASH INFLOWS																
	Balance at start of period		(375)	(7,150)	(9,516)	(11,881)	(17,497)	(19,862)	(22,228)	(26,667)	(41,422)	(49,605)	(37,810)	(41,493)	(56,748)	(60,431)	(48,636)
	Harvest & Bonus Income	-	-	-	-	-	-	-	-	-	-	21,700	-	-	-	21,700	-
	Custom Service Provision	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Other Income & A/R Paid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Crop Insurance Indemnity Paid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	FCC Land Expansion Loan	-	-	45,000	-	-	-	45,000	-	-	-	-	-	-	-	-	-
	FCC Harvester Loan	-	-	-	-	-	-	-	-	-	19,600	-	-	-	-	-	-
	Other Loans	-	25,600	-	-	-	-	-	7,180	-	-	-	-	-	-	-	-
	Producer's Equity Investment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	TOTAL CASH INFLOWS	-	25,600	45,000	-	-	-	45,000	7,180	-	19,600	21,700	-	-	-	21,700	-
	CASH OUTFLOWS																
	Capital Expenditures								8,975		24,600						
	Equipment Purchases	-	32,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Building Purchases	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Land Purchases	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Land Clearances	-	-	45,000	-	-	-	45,000	-	-	-	-	-	-	-	-	-
	Total Capital Expenditures	-	32,000	45,000	-	-	-	45,000	8,975	-	24,600	-	-	-	-	-	-
	Operating Expenditures					3,250				3,250				3,250			
	Pruning	-	-	-	-	-	-	-	-	3,850	-	-	-	3,850	-	-	-
	Fertilization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pesticide	-	-	-	-	-	-	-	-	4,750	-	-	-	4,750	-	-	-
	Herbicide	-	-	-	-	-	-	-	-	-	-	3,350	-	-	-	3,350	-
	Pollination	-	-	-	-	-	-	-	-	-	-	3,150	-	-	-	3,150	-
	Harvesting	-	-	425	425	425	425	425	425	525	525	1,025	1,025	1,025	1,025	1,025	1,025
	Equipment Maintenance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Building Maintenance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Land Lease Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total Operating Expenditures	-	-	425	425	3,675	425	425	425	12,375	525	7,525	1,025	12,875	1,025	7,525	1,025
	Other Expenditures																
0.00%	Short-term Loan Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Long-term Loan Interest	-	-	512	491	469	448	425	402	523	493	463	432	401	368	336	1,202
	LT Loan Principal - Equipment	-	-	1,054	1,075	1,096	1,118	1,140	1,163	1,482	1,512	1,542	1,573	1,604	1,636	1,669	1,702
	LT Loan Principal - Buildings	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	LT Loan Principal - Land	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,852
	Producer's Equity Repayment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Income Tax Paid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Other Admin Expenses	375	375	375	375	375	375	375	654	375	654	375	654	375	654	375	654
	Other	375	375	1,941	1,941	1,941	1,941	1,941	2,219	2,380	2,658	2,380	2,658	2,380	2,658	2,380	5,410
	Total Other Expenditures	375	375	1,941	1,941	1,941	1,941	1,941	2,219	2,380	2,658	2,380	2,658	2,380	2,658	2,380	5,410
	TOTAL CASH OUTFLOWS	375	32,375	47,366	2,366	5,616	2,366	47,366	11,619	14,755	27,783	9,905	3,683	15,255	3,683	9,905	6,435
	NET CASH FLOW	(375)	(6,775)	(2,366)	(2,366)	(5,616)	(2,366)	(2,366)	(4,439)	(14,755)	(8,183)	11,795	(3,683)	(15,255)	(3,683)	11,795	(6,435)
	Cash at Start of Period	106,000	105,625	98,850	96,484	94,119	88,503	86,138	83,772	79,333	64,578	56,395	68,190	64,507	49,252	45,569	57,364
	Cash at End of Period	105,625	98,850	96,484	94,119	88,503	86,138	83,772	79,333	64,578	56,395	68,190	64,507	49,252	45,569	57,364	50,929

Q1Y5	Q2Y5	Q3Y5	Q4Y5	Q1Y6	Q2Y6	Q3Y6	Q4Y6	Q1Y7	Q2Y7	Q3Y7	Q4Y7	Q1Y8	Q2Y8	Q3Y8	Q4Y8	
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Line Item
																CASH INFLOWS
(55,071)	(73,078)	(79,513)	(57,220)	(66,407)	(87,242)	(96,505)	(76,672)	(85,569)	(106,037)	(114,655)	(78,922)	(87,821)	(107,849)	(116,028)	(79,856)	Balance at start of period
-	-	37,200	-	-	-	37,200	-	-	-	55,800	-	-	-	55,800	-	Harvest & Bonus Income
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Custom Service Provision
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Other Income & A/R Paid
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Crop Insurance Indemnity Paid
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FCC Land Expansion Loan
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	FCC Harvester Loan
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Other Loans
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Producer's Equity Investment
-	-	37,200	-	-	-	37,200	-	-	-	55,800	-	-	-	55,800	-	**TOTAL CASH INFLOWS**
																CASH OUTFLOWS
																Capital Expenditures
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Equipment Purchases
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Building Purchases
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Land Purchases
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Land Clearances
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Total Capital Expenditures
																Operating Expenditures
3,250	-	-	-	3,250	-	-	-	3,250	-	-	-	3,250	-	-	-	Pruning
3,850	-	-	-	3,850	-	-	-	3,850	-	-	-	3,850	-	-	-	Fertilization
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Pesticide
4,750	-	-	-	4,750	-	-	-	4,750	-	-	-	4,750	-	-	-	Herbicide
-	-	3,350	-	-	-	3,350	-	-	-	3,350	-	-	-	3,350	-	Pollination
-	-	5,400	-	-	-	5,400	-	-	-	8,100	-	-	-	8,100	-	Harvesting
1,025	1,025	1,025	1,025	1,025	1,025	1,025	1,025	1,025	1,025	1,025	1,025	1,025	1,025	1,025	1,025	Equipment Maintenance
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Building Maintenance
-	-	-	-	76	76	76	76	76	76	76	76	76	76	76	76	Land Lease Costs
12,875	1,025	9,775	1,025	12,951	1,101	9,851	1,101	12,951	1,101	12,551	1,101	12,951	1,101	12,551	1,101	Total Operating Expenditures
																Other Expenditures
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Short-term Loan Interest
1,131	1,059	985	1,809	1,695	1,579	1,852	1,747	1,639	1,529	1,416	1,302	1,185	1,075	962	847	Long-term Loan Interest
1,736	1,771	1,807	1,843	1,880	1,917	1,197	1,221	1,245	1,270	1,295	1,321	908	927	945	964	LT Loan Principal - Equipment
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LT Loan Principal - Buildings
1,889	1,927	1,965	3,857	3,934	4,013	4,093	4,175	4,258	4,343	4,430	4,519	4,609	4,701	4,795	4,891	LT Loan Principal - Land
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Producer's Equity Repayment
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Income Tax Paid
375	654	375	654	375	654	375	655	375	375	375	656	375	375	375	657	Other Admin Expenses
																Other
5,132	5,410	5,132	8,162	7,884	8,162	7,517	7,796	7,517	7,517	7,517	7,798	7,078	7,078	7,078	7,360	Total Other Expenditures
18,007	6,435	14,907	9,187	20,835	9,263	17,368	8,897	20,468	8,618	20,068	8,898	20,029	8,179	19,629	8,461	**TOTAL CASH OUTFLOWS**
(18,007)	(6,435)	22,293	(9,187)	(20,835)	(9,263)	19,832	(8,897)	(20,468)	(8,618)	35,732	(8,898)	(20,029)	(8,179)	36,171	(8,461)	**NET CASH FLOW**
50,929	32,922	26,487	48,780	39,593	18,758	9,495	29,328	20,431	(37)	(8,655)	27,078	18,179	(1,849)	(10,028)	26,144	Cash at Start of Period
32,922	26,487	48,780	39,593	18,758	9,495	29,328	20,431	(37)	(8,655)	27,078	18,179	(1,849)	(10,028)	26,144	17,683	Cash at End of Period

NE NB Blueberry Growers Study
Model of Production

User Notes:

Period Selection
- ○ Quarterly Period:
- ◉ Annual Periods

Income Tax Regime
- ◉ Sole Proprietor
- ○ Limited Company

This model is set up as a series of pro-forma financial statements (balance sheet, income and cash flow statements) hooked to input modules used for input of data relating to fixed assets, gov't programs, and operations/admin costs. All user-input data can be input using the linked modules; the user does not have to input data directly into the financial statements.

The first choices to make are self-explanatory in the checkboxes to the left. The model will automatically adjust interest rate, depreciation and loan payment information depending on whether quarterly or annual periods are chosen. Column headings will adjust depending on the reporting period chosen. Users should input data per period shown in the headings for each individual item. Note that changing from quarterly to annual periods will likely require significant changes in the data input in the input modules.

The initial status of the producer can be input in the form below. This describes the initial debt/equity position of the producer.

Current Assets		
Cash & Short-term Investmer	106,000	Cash, GICs, assets readily converted to cash
Accounts Receivable		Money owing but not paid for product or services rendered.
Fixed Assets		
Equipment	-	The depreciated value of all equipment owned
Buildings		The dépreciated value of all buildings owned
Land	142,000	The market value of all land owned.
Total Assets	248,000	
Current Liabilities		
Accounts Payable		Money owed but not paid
Long-term Liabilities		
Long-term Loans		Principal balance remaining on all long-term loans, mortgages, etcs.
Total Liabilities	-	Note: Outstanding long-term loans should also be input into the model in TableS FA-1 To FA-3, using remaining
Equity Available as Security	248,000	principal balance and periods left in loan. Use "0" (zero) for Purchase Period, remaining lifetime for Lifetime, and no down payment

Line of Credit Interest Rate:	8.00%	Input annual interest rate on Line of Credit
Long-term Borrowing Rate:	8.00%	Used for calculation of ROI only
Rate of Interest on Cash Balance	8.00%	Re-investment rate used for calculation of ROI only
Farm Salvage Value	140000	Input estimate of sale value of farm after at least 10 years of operation (assuming land is fully productive)

NE NB Blueberry Growers Study

Production Model

Fixed Asset Summary

Table FA-1

Equipment	Purchase Price	Period Purchase	Down Payment	Annual Interest	No. Years Financed	Approx. Maint/Yr	Lifetime (Years)	Payment per Period	Debt/Equity in period
Tractor	21000	1	4200	8.00%	5	1000	15	4,208	0.29
Boom Sprayer	4400	3	880	8.00%	5	400	15	882	0.61
Mist Sprayer			0					0	
Flail Mower	7000	1	1400	8.00%	5	700	15	1,403	0.29
Brush Cutter	4000	1	800	8.00%	5			801	0.29
Quebec Harvesters			0					0	
Mechanical Harvester			0					0	
Fertilizer Spread	4575	3	915	8.00%	5	200	15	917	0.61
Other			0					0	
Other			0					0	
Other			0					0	
Other			0					0	
Other			0					0	
Other			0					0	
Other			0					0	

Note: Do not use this table for equipment bought under the Wild Blueberry Initiative. Use WBI tables in Gov't Programs
WARNING - Use 0 for Down Payment if Period = 0

Table FA-2

Buildings	Purchase Price	Period Purchase	Down Payment	Annual Interest	No. Years Financed	Approx. Maint/Yr	Lifetime (Years)	Payment per Period	Debt/Equity in period
Barn								0	
House								0	
Shed								0	
Outbuilding								0	
Other								0	
Other								0	
Other								0	

Table FA-3

Land Acreage	Purchase Price	Period Purchase	Down Payment	Annual Interest	No. Years Financed	Payment per Period	Debt/Equity in period
						0	
						0	
						0	
						0	
						0	
						0	
						0	

Do not use this table for land cleared under the NBDARD Wild Blueberry Initiative Use the WBI tables on the Gov't Programs sheet.

Do not use this table for land purchased under the New Land Purchase Program. Use the table on the Gov't Programs sheet.

NE NB Blueberry Growers Study
Production Model
Government Programs

Land Lease Program

Land Lease Summary

Acreage	Year Leased
50	1
50	2

Land Lease Program - Costs

Year		Lease
From	To	Cost/Acre
1	5	0.00
6	6	6.07
7	8	8.10
9	20	10.12

Lease costs are new in 1999, and reflect the change to a 20 year lease period.

NBDARD Land Purchase Program

Acreage	Cost/ Acre	Year Purchased

New Brunswick Enhanced Wild Blueberry Initiative

1. Land Expansion Loan

Note: Actual land clearances to be input on "operations" sheet. This table is for loan info only.

Item	Loan Amount	Period Awarded	Annual Interest	No. Years Financed	Debt/Equity In Period
Land Expansion 1	45000	1	0.08	5	0.29
Land Expansion 2	45000	2	0.08	5	0.49
Land Expansion 3					
Land Expansion 4					
Land Expansion 5					
Land Expansion 6					

2. Mechanical Harvesters (only those bought under WBI loan program)

Item	Purchase Price	Down Payment	Period Purchase	Annual Interest	No. Years Financed	Annual Maintenance	Lifetime (years)	Loan Amount	Debt/Equity In Period
Harvester 1	24600	5000	3	0.08	5	2000	15	19600	0.61
Harvester 2								0	
Harvester 3								0	
Harvester 4								0	
Harvester 5								0	

Crop Insurance Program

Crop Insurance

- ○ 50% Coverage
- ◉ 65% Coverage
- ○ 80% Coverage

Indemnities Received

Period	1	2	3	4	5	6	7	8
Indemnity								

Period	9	10	11	12	13	14	15	16
Indemnity								

Period	17	18	19	20	21	22	23	24
Indemnity								

NE NB Blueberry Growers Study
Model of Production
Summary of Operations

Period

Table O-1: Cultural Practices

Activity	Unit Cost	Payment	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15	Y16	Y17	Y18	Y19	Y20	Y21	Y22	Y23	Y24
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Acreage Cleared/Period	900	0	50	50																						
Acreage Pruned/Period	65	0		50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Acreage Fertilized/Period	77	0			50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Acreage Sprayed (Pesticide)	20	0																								
Acreage Sprayed (Herbicide)	95	0			50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Beehives Used/Period	67	0			50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50

Table O-2: Harvesting

		Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15	Y16	Y17	Y18	Y19	Y20	Y21	Y22	Y23	Y24
Acres Harvested/Period				50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Average Yield/Acre (lbs)				700	700	1200	1200	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Price/lb. @ Harvest				0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Bonus Price/lb.	1																								
Cost of Harvesting	0.09	-	-	3,150	3,150	5,400	5,400	8,100	8,100	8,100	8,100	8,100	8,100	8,100	8,100	8,100	8,100	8,100	8,100	8,100	8,100	8,100	8,100	8,100	8,100
Income @ Harvest		-	-	21,700	21,700	37,200	37,200	55,800	55,800	55,800	55,800	55,800	55,800	55,800	55,800	55,800	55,800	55,800	55,800	55,800	55,800	55,800	55,800	55,800	55,800
Bonus Income		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table O-3 - Miscellaneous

	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15	Y16	Y17	Y18	Y19	Y20	Y21	Y22	Y23	Y24
Other Income (other than blueberries)																								
Income from Custom Service Provision																								
Accounts Receivable (paid)																								
Cash at end of Period (For Reference Only)	98,100	84,708	71,145	60,000	50,856	30,156	26,470	22,700	20,641	29,765	48,704	69,653	91,723	######	######	######	######	######	######	######	######	######	######	######
Total Cash required				0																				

Table O-4: Administration

	Approx. Cost/Year
Accounting	300
Legal	
Insurance (Other than Crop)	
Bank Charges	100
Office Expenses	200
Rent	
Utilities & Telephone	600
Wages/Benefits	
Misc.	300
Total Annual Admin Costs	1,500

NE NB Blueberry Growers Study
Financial Statements

Balance Sheet

Initial State	Line Item	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13
		Period 1	2	3	4	5	6	7	8	9	10	11	12	13
	ASSETS													
	Current Assets													
106,000	Cash & Short-term Investmen	98,100	84,708	71,145	60,000	50,856	30,156	26,470	22,700	20,641	29,765	48,704	69,653	91,723
-	Accounts Receivable	-	-	-	-	-	-	-	-	-	-	-	-	-
106,000	Total Current Assets	98,100	84,708	71,145	60,000	50,856	30,156	26,470	22,700	20,641	29,765	48,704	69,653	91,723
	Fixed Assets (net of depreciation)													
-	Equipment	32,000	22,400	49,255	34,479	24,135	16,894	11,826	8,278	5,795	4,056	2,839	1,988	1,391
-	Buildings	-	-	-	-	-	-	-	-	-	-	-	-	-
142,000	Land	142,000	142,000	142,000	142,000	142,000	142,000	142,000	142,000	142,000	142,000	142,000	142,000	142,000
	Land Improvements (Clearing	45,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000
142,000	Total Fixed Assets	219,000	254,400	281,255	266,479	256,135	248,894	243,826	240,278	237,795	236,056	234,839	233,988	233,391
248,000	**TOTAL ASSETS**	317,100	339,108	352,400	326,479	306,991	279,050	270,297	262,978	258,436	265,821	283,544	303,640	325,114
	LIABILITIES													
	Current Liabilities													
-	Accounts Payable	-	-	-	-	-	-	-	-	-	-	-	-	-
	Short-Term Loans (Line of Cr	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Total Current Liabilities	-	-	-	-	-	-	-	-	-	-	-	-	-
	Long Term Liabilities													
-	All Long Term Loans	70,600	111,236	133,304	126,990	112,501	89,182	67,068	43,185	19,190	4,545	0	0	0
-	Total Long Term Liabilities	70,600	111,236	133,304	126,990	112,501	89,182	67,068	43,185	19,190	4,545	0	0	0
-	**TOTAL LIABILITIES**	70,600	111,236	133,304	126,990	112,501	89,182	67,068	43,185	19,190	4,545	0	0	0
	PRODUCER'S EQUITY													
248,000	**TOTAL PRODUCER'S EQUITY**	246,500	227,871	219,096	199,489	194,490	189,868	203,229	219,793	239,246	261,276	283,544	303,640	325,114
248,000	**TOTAL LIAB. & PRODUCER'S EQU**	317,100	339,108	352,400	326,479	306,991	279,050	270,297	262,978	258,436	265,821	283,544	303,640	325,114
-	Balanced?	-	-	-	-	-	-	-	-	-	-	-	-	-

Y14 14	Y15 15	Y16 16	Y17 17	Y18 18	Y19 19	Y20 20	Y21 21	Y22 22	Y23 23	Y24 24	
											ASSETS
112,577	133,406	154,220	176,292	198,359	222,355	246,348	270,339	294,329	318,320	342,313	Current Assets
-	-	-	-	-	-	-	-	-	-	-	Cash & Short-term Investments
112,577	133,406	154,220	176,292	198,359	222,355	246,348	270,339	294,329	318,320	342,313	Accounts Receivable
											Total Current Assets
974	682	477	334	234	164	115	80	56	39	28	Fixed Assets (net of depreciation)
-	-	-	-	-	-	-	-	-	-	-	Equipment
142,000	142,000	142,000	142,000	142,000	142,000	142,000	142,000	142,000	142,000	142,000	Buildings
90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	Land
232,974	232,682	232,477	232,334	232,234	232,164	232,115	232,080	232,056	232,039	232,026	Land Improvements (Clearing et al)
											Total Fixed Assets
345,551	366,088	386,698	408,626	430,593	454,519	478,463	502,419	526,385	550,360	574,340	**TOTAL ASSETS**
											LIABILITIES
-	-	-	-	-	-	-	-	-	-	-	Current Liabilities
-	-	-	-	-	-	-	-	-	-	-	Accounts Payable
											Short-Term Loans (Line of Credit)
-	-	-	-	-	-	-	-	-	-	-	Total Current Liabilities
											Long Term Liabilities
0	0	0	0	0	0	0	0	0	0	0	All Long Term Loans
0	0	0	0	0	0	0	0	0	0	0	Total Long Term Liabilities
0	0	0	0	0	0	0	0	0	0	0	**TOTAL LIABILITIES**
											PRODUCER'S EQUITY
345,551	366,088	386,698	408,626	430,593	454,519	478,463	502,419	526,385	550,360	574,340	**TOTAL PRODUCER'S EQUITY**
345,551	366,088	386,698	408,626	430,593	454,519	478,463	502,419	526,385	550,360	574,340	**TOTAL LIAB. & PRODUCER'S EQUITY**
-	-	-	-	-	-	-	-	-	-	-	Balanced?

Income Statement

Initial State Line Item	Y1 1	Y2 2	Y3 3	Y4 4	Y5 5	Y6 6	Y7 7	Y8 8	Y9 9	Y10 10	Y11 11	Y12 12	Y13 13
REVENUE													
Sale of Product	-	-	21,700	21,700	37,200	37,200	55,800	55,800	55,800	55,800	55,800	55,800	55,800
Custom Service Provision	-	-	-	-	-	-	-	-	-	-	-	-	-
Crop Insurance Indemnity Re	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Income & A/R Paid	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL REVENUE	-	-	21,700	21,700	37,200	37,200	55,800	55,800	55,800	55,800	55,800	55,800	55,800
EXPENSES													
Operating Expenses													
Land Lease Costs	-	-	-	-	-	304	709	810	911	1,012	1,012	1,012	1,012
Pruning	-	3,250	3,250	3,250	3,250	3,250	3,250	3,250	3,250	3,250	3,250	3,250	3,250
Fertilization	-	-	3,850	3,850	3,850	3,850	3,850	3,850	3,850	3,850	3,850	3,850	3,850
Pesticide	-	-	-	-	-	-	-	-	-	-	-	-	-
Herbicide	-	-	4,750	4,750	4,750	4,750	4,750	4,750	4,750	4,750	4,750	4,750	4,750
Pollination	-	-	3,350	3,350	3,350	3,350	3,350	3,350	3,350	3,350	3,350	3,350	3,350
Harvesting	-	-	3,150	3,150	5,400	5,400	8,100	8,100	8,100	8,100	8,100	8,100	8,100
Equipment Maintenance	-	1,700	1,700	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300
Building Maintenance	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Operating Expenses	-	4,950	20,050	22,650	24,900	25,204	28,309	28,410	28,511	28,612	28,612	28,612	28,612
Administration Expenses													
Accounting	300	300	300	300	300	300	300	300	300	300	300	300	300
Legal	-	-	-	-	-	-	-	-	-	-	-	-	-
Depreciation on Equipment	-	9,600	6,720	14,777	10,344	7,240	5,068	3,548	2,483	1,738	1,217	852	596
Depreciation on Buildings	-	-	-	-	-	-	-	-	-	-	-	-	-
Crop Insurance	-	531	506	484	464	446	429	413	398	384	371	359	348
Other Insurance	-	-	-	-	-	-	-	-	-	-	-	-	-
Short Term Loan Interest	-	-	-	-	-	-	-	-	-	-	-	-	-
Long Term Loan Interest	-	2,048	1,699	1,896	4,991	7,432	7,134	5,365	3,455	1,535	364	-	-
Bank Charges	100	100	100	100	100	100	100	100	100	100	100	100	100
Office Expenses	200	200	200	200	200	200	200	200	200	200	200	200	200
Rent	-	-	-	-	-	-	-	-	-	-	-	-	-
Utilities & Telephone	600	600	600	600	600	600	600	600	600	600	600	600	600
Wages/Benefits	-	-	-	-	-	-	-	-	-	-	-	-	-
Misc.	300	300	300	300	300	300	300	300	300	300	300	300	300
Total Administration Expenses	1,500	13,679	10,425	18,657	17,299	16,618	14,131	10,826	7,836	5,158	3,452	2,711	2,444
TOTAL EXPENSES	1,500	18,629	30,475	41,307	42,199	41,821	42,440	39,236	36,347	33,770	32,064	31,323	31,056
Net Income (Loss) before Tax	(1,500)	(18,629)	(8,775)	(19,607)	(4,999)	(4,621)	13,360	16,564	19,453	22,030	23,736	24,477	24,744
Income Tax	-	-	-	-	-	-	-	-	-	-	1,468	4,380	3,270
NET INCOME (LOSS) AFTER TAX	(1,500)	(18,629)	(8,775)	(19,607)	(4,999)	(4,621)	13,360	16,564	19,453	22,030	22,268	20,097	21,474
Opening Retained Income/Earning	-	(1,500)	(20,129)	(28,904)	(48,511)	(53,510)	(58,132)	(44,771)	(28,207)	(8,754)	13,276	35,544	55,640
Closing Retained Income/Earnings	(1,500)	(20,129)	(28,904)	(48,511)	(53,510)	(58,132)	(44,771)	(28,207)	(8,754)	13,276	35,544	55,640	77,114

Y14	Y15	Y16	Y17	Y18	Y19	Y20	Y21	Y22	Y23	Y24	Line Item
14	15	16	17	18	19	20	21	22	23	24	
											REVENUE
55,800	55,800	55,800	55,800	55,800	55,800	55,800	55,800	55,800	55,800	55,800	Sale of Product
-	-	-	-	-	-	-	-	-	-	-	Custom Service Provision
-	-	-	-	-	-	-	-	-	-	-	Crop Insurance Indemnity Received
-	-	-	-	-	-	-	-	-	-	-	Other Income & A/R Paid
55,800	55,800	55,800	55,800	55,800	55,800	55,800	55,800	55,800	55,800	55,800	**TOTAL REVENUE**
											EXPENSES
											Operating Expenses
1,012	1,012	1,012	1,012	1,012	1,012	1,012	1,012	1,012	1,012	1,012	Land Lease Costs
3,250	3,250	3,250	3,250	3,250	3,250	3,250	3,250	3,250	3,250	3,250	Pruning
3,850	3,850	3,850	3,850	3,850	3,850	3,850	3,850	3,850	3,850	3,850	Fertilization
-	-	-	-	-	-	-	-	-	-	-	Pesticide
4,750	4,750	4,750	4,750	4,750	4,750	4,750	4,750	4,750	4,750	4,750	Herbicide
3,350	3,350	3,350	3,350	3,350	3,350	3,350	3,350	3,350	3,350	3,350	Pollination
8,100	8,100	8,100	8,100	8,100	8,100	8,100	8,100	8,100	8,100	8,100	Harvesting
4,300	4,300	4,300	2,600	2,600	-	-	-	-	-	-	Equipment Maintenance
-	-	-	-	-	-	-	-	-	-	-	Building Maintenance
28,612	28,612	28,612	26,912	26,912	24,312	24,312	24,312	24,312	24,312	24,312	Total Operating Expenses
											Administration Expenses
300	300	300	300	300	300	300	300	300	300	300	Accounting
-	-	-	-	-	-	-	-	-	-	-	Legal
417	292	205	143	100	70	49	34	24	17	12	Depreciation on Equipment
-	-	-	-	-	-	-	-	-	-	-	Depreciation on Buildings
338	328	318	309	301	293	286	279	272	266	260	Crop Insurance
-	-	-	-	-	-	-	-	-	-	-	Other Insurance
-	-	-	-	-	-	-	-	-	-	-	Short Term Loan Interest
-	-	-	-	-	-	-	-	-	-	-	Long Term Loan Interest
100	100	100	100	100	100	100	100	100	100	100	Bank Charges
200	200	200	200	200	200	200	200	200	200	200	Office Expenses
-	-	-	-	-	-	-	-	-	-	-	Rent
600	600	600	600	600	600	600	600	600	600	600	Utilities & Telephone
-	-	-	-	-	-	-	-	-	-	-	Wages/Benefits
300	300	300	300	300	300	300	300	300	300	300	Misc.
2,255	2,120	2,023	1,953	1,901	1,863	1,835	1,813	1,796	1,783	1,772	Total Administration Expenses
30,867	30,732	30,635	28,865	28,813	26,175	26,147	26,125	26,108	26,095	26,084	**TOTAL EXPENSES**
24,933	25,068	25,165	26,935	26,987	29,625	29,653	29,675	29,692	29,705	29,716	Net Income (Loss) before Tax
4,496	4,531	4,556	5,007	5,020	5,698	5,710	5,719	5,726	5,731	5,735	Income Tax
20,437	20,537	20,610	21,928	21,967	23,927	23,943	23,956	23,966	23,974	23,981	**NET INCOME (LOSS) AFTER TAX**
77,114	97,551	118,088	138,698	160,626	182,593	206,519	230,463	254,419	278,385	302,360	**Opening Retained Income/Earnings**
97,551	118,088	138,698	160,626	182,593	206,519	230,463	254,419	278,385	302,360	326,340	**Closing Retained Income/Earnings**

Cash Flow Statement

Initial State	Line Item	Y1 1	Y2 2	Y3 3	Y4 4	Y5 5	Y6 6	Y7 7	Y8 8	Y9 9	Y10 10	Y11 11	Y12 12	Y13 13
	CASH INFLOWS													
	Harvest & Bonus Income	-	-	21,700	21,700	37,200	37,200	55,800	55,800	55,800	55,800	55,800	55,800	55,800
	Custom Service Provision	-	-	-	-	-	-	-	-	-	-	-	-	-
	Other Income & A/R Paid	-	-	-	-	-	-	-	-	-	-	-	-	-
	Crop Insurance Indemnity Paid	-	-	-	-	-	-	-	-	-	-	-	-	-
	FCC Land Expansion Loan	45,000	45,000	-	-	-	-	-	-	-	-	-	-	-
	FCC Harvester Loan	-	-	19,600	-	-	-	-	-	-	-	-	-	-
	Other Loans	25,600	-	7,180	-	-	-	-	-	-	-	-	-	-
	TOTAL CASH INFLOWS	70,600	45,000	48,480	21,700	37,200	37,200	55,800	55,800	55,800	55,800	55,800	55,800	55,800
	CASH OUTFLOWS													
	Capital Expenditures													
	Equipment Purchases	32,000	-	33,575	-	-	-	-	-	-	-	-	-	-
	Building Purchases	-	-	-	-	-	-	-	-	-	-	-	-	-
	Land Purchases	-	-	-	-	-	-	-	-	-	-	-	-	-
	Land Clearances	45,000	45,000	-	-	-	-	-	-	-	-	-	-	-
	Total Capital Expenditures	77,000	45,000	33,575	-	-	-	-	-	-	-	-	-	-
	Operating Expenditures													
	Pruning	-	3,250	3,250	3,250	3,250	3,250	3,250	3,250	3,250	3,250	3,250	3,250	3,250
	Fertilization	-	-	3,850	3,850	3,850	3,850	3,850	3,850	3,850	3,850	3,850	3,850	3,850
	Pesticide	-	-	-	-	-	-	-	-	-	-	-	-	-
	Herbicide	-	-	4,750	4,750	4,750	4,750	4,750	4,750	4,750	4,750	4,750	4,750	4,750
	Pollination	-	-	3,350	3,350	3,350	3,350	3,350	3,350	3,350	3,350	3,350	3,350	3,350
	Harvesting	-	-	3,150	3,150	5,400	5,400	8,100	8,100	8,100	8,100	8,100	8,100	8,100
	Equipment Maintenance	-	1,700	1,700	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300
	Building Maintenance	-	-	-	-	-	-	-	-	-	-	-	-	-
	Land Lease Costs	-	-	-	-	-	304	709	810	911	1,012	1,012	1,012	1,012
	Total Operating Expenditures	-	4,950	20,050	22,650	24,900	25,204	28,309	28,410	28,511	28,612	28,612	28,612	28,612
	Other Expenditures													
8.00%	Short-term Loan Interest	-	-	-	-	-	-	-	-	-	-	-	-	-
	Long-term Loan Interest	-	2,048	1,699	1,896	4,991	7,432	7,134	5,365	3,455	1,535	364	-	-
	LT Loan Principal - Equipmen	-	4,364	4,713	6,314	6,819	7,364	4,883	5,273	3,897	4,209	4,545	-	-
	LT Loan Principal - Buildings	-	-	-	-	-	-	-	-	-	-	-	-	-
	LT Loan Principal - Land	-	-	-	-	7,671	15,955	17,231	18,610	20,098	10,436	-	-	-
	Producer's Equity Repayment	-	-	-	-	-	-	-	-	-	-	-	-	-
	Income Tax Paid	-	-	-	-	-	-	-	-	-	-	1,468	4,380	3,270
	Other Admin Expenses	1,500	2,031	2,006	1,984	1,964	1,946	1,929	1,913	1,898	1,884	1,871	1,859	1,848
	Total Other Expenditures	1,500	8,442	8,418	10,194	21,445	32,696	31,177	31,161	29,348	18,064	8,249	6,239	5,118
	TOTAL CASH OUTFLOWS	78,500	58,392	62,043	32,844	46,345	57,900	59,485	59,571	57,859	46,676	36,861	34,851	33,730
	NET CASH FLOW	(7,900)	(13,392)	(13,563)	(11,144)	(9,145)	(20,700)	(3,685)	(3,771)	(2,059)	9,124	18,939	20,949	22,070
	Cash at Start of Period	106,000	98,100	84,708	71,145	60,000	50,856	30,156	26,470	22,700	20,641	29,765	48,704	69,653
	Cash at End of Period	98,100	84,708	71,145	60,000	50,856	30,156	26,470	22,700	20,641	29,765	48,704	69,653	91,723

Y14	Y15	Y16	Y17	Y18	Y19	Y20	Y21	Y22	Y23	Y24	
14	15	16	17	18	19	20	21	22	23	24	Line Item
											CASH INFLOWS
55,800	55,800	55,800	55,800	55,800	55,800	55,800	55,800	55,800	55,800	55,800	Harvest & Bonus Income
-	-	-	-	-	-	-	-	-	-	-	Custom Service Provision
-	-	-	-	-	-	-	-	-	-	-	Other Income & A/R Paid
-	-	-	-	-	-	-	-	-	-	-	Crop Insurance Indemnity Paid
-	-	-	-	-	-	-	-	-	-	-	FCC Land Expansion Loan
-	-	-	-	-	-	-	-	-	-	-	FCC Harvester Loan
-	-	-	-	-	-	-	-	-	-	-	Other Loans
55,800	55,800	55,800	55,800	55,800	55,800	55,800	55,800	55,800	55,800	55,800	**TOTAL CASH INFLOWS**
											CASH OUTFLOWS
											Capital Expenditures
-	-	-	-	-	-	-	-	-	-	-	Equipment Purchases
-	-	-	-	-	-	-	-	-	-	-	Building Purchases
-	-	-	-	-	-	-	-	-	-	-	Land Purchases
-	-	-	-	-	-	-	-	-	-	-	Land Clearances
-	-	-	-	-	-	-	-	-	-	-	Total Capital Expenditures
											Operating Expenditures
3,250	3,250	3,250	3,250	3,250	3,250	3,250	3,250	3,250	3,250	3,250	Pruning
3,850	3,850	3,850	3,850	3,850	3,850	3,850	3,850	3,850	3,850	3,850	Fertilization
-	-	-	-	-	-	-	-	-	-	-	Pesticide
4,750	4,750	4,750	4,750	4,750	4,750	4,750	4,750	4,750	4,750	4,750	Herbicide
3,350	3,350	3,350	3,350	3,350	3,350	3,350	3,350	3,350	3,350	3,350	Pollination
8,100	8,100	8,100	8,100	8,100	8,100	8,100	8,100	8,100	8,100	8,100	Harvesting
4,300	4,300	4,300	2,600	2,600	-	-	-	-	-	-	Equipment Maintenance
-	-	-	-	-	-	-	-	-	-	-	Building Maintenance
1,012	1,012	1,012	1,012	1,012	1,012	1,012	1,012	1,012	1,012	1,012	Land Lease Costs
28,612	28,612	28,612	26,912	26,912	24,312	24,312	24,312	24,312	24,312	24,312	Total Operating Expenditures
											Other Expenditures
-	-	-	-	-	-	-	-	-	-	-	Short-term Loan Interest
-	-	-	-	-	-	-	-	-	-	-	Long-term Loan Interest
-	-	-	-	-	-	-	-	-	-	-	LT Loan Principal - Equipment
-	-	-	-	-	-	-	-	-	-	-	LT Loan Principal - Buildings
-	-	-	-	-	-	-	-	-	-	-	LT Loan Principal - Land
-	-	-	-	-	-	-	-	-	-	-	Producer's Equity Repayment
4,496	4,531	4,556	5,007	5,020	5,698	5,710	5,719	5,726	5,731	5,735	Income Tax Paid
1,838	1,828	1,818	1,809	1,801	1,793	1,786	1,779	1,772	1,766	1,760	Other Admin Expenses
6,334	6,359	6,374	6,817	6,821	7,491	7,495	7,497	7,498	7,497	7,495	Total Other Expenditures
34,946	34,971	34,986	33,729	33,733	31,803	31,807	31,809	31,810	31,809	31,807	**TOTAL CASH OUTFLOWS**
20,854	20,829	20,814	22,071	22,067	23,997	23,993	23,991	23,990	23,991	23,993	**NET CASH FLOW**
91,723	112,577	133,406	154,220	176,292	198,359	222,355	246,348	270,339	294,329	318,320	Cash at Start of Period
112,577	133,406	154,220	176,292	198,359	222,355	246,348	270,339	294,329	318,320	342,313	Cash at End of Period